Renewable Energy in Ontario: Future Directions for Community Engagement

Student: Zachary Sadowski
Supervisor: Ray Rogers
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Abstract

In Ontario, the way community engagement is conducted during the renewable energy development process is inadequate and fuels the culture of opposition in Ontario. Looking at the history of energy policy and its evolution towards its present form, it is clear that efforts to mitigate this opposition have fallen short. It is commonly thought that opposition stems from a lack of knowledge of technology and its benefits, as well as, a misunderstanding of the adverse health effects. This is categorically untrue and both acceptance and opposition are complex positions that are relatively unique on a case-by-case basis. Social psychology explains that underlying these positions are a number of factors such as normative influences, past experiences and the accessibility of different frames. This literature also highlights trust as the fundamental starting point for effective community engagement. A new approach to community engagement is recommended where a trusting partner relationship is established and used to foster an environment of effective dialogue that results in renewable energy development that is satisfactory to all stakeholders.

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Foreword

One day my father sent me a message stating that he needed to speak with me because he had a question regarding renewable energy policy. A strange request I thought, as he has no daily dealings with anything close to this subject, but I was happy to discuss the topic with him. When I was able to connect with him, he informed me that my mother and he had received a notification that a wind turbine would be built on their street in the town of The Blue Mountains, Ontario. My immediate thought was how exciting this was to see the result of a policy I whole-heartedly supported, impact somewhere so close to home. Then I realized that they were in fact asking me because they wanted to know how this was allowed to happen and what they could do to stop it. They surely do not hold the same political views or values as me, but both are well educated and understand the benefits of renewable energy- so why could they possibly be opposed? There concerns sounded like the following: "We don't want a big ugly turbine on our street" and "it doesn't belong so close to residential properties." I asked my mother, if she would feel differently if the money our neighbour would generate were split amongst the neighbourhood. It certainly would not hurt she responded. Before my very eyes what had unfolded was exactly what I was writing my major paper on. Two people who would normally be supportive of efforts towards a cleaner energy system were actively against the placement of a wind turbine near their home. The reasons were not a lack of knowledge of the benefits or the technology- they were reasons of a different nature. They felt powerless, like it was being forced upon them with no course for meaningful discussion or resistance. They felt it was unfair that a neighbour would benefit at a cost to them; a cost that was manifested in the very presence of a new structure in their neighbourhood. These, among many others, are the current issues that are being faced in the implementation of Ontario's renewable

energy policy across the province. This paper will look at these issues, seek to understand them and make suggestions about how to improve the environment of discourse regarding these issues during the implementation process.

Introduction

Over the last decade, energy policy in Ontario has gone through a number of changes. The pinnacle of these changes occurred in 2009 when the Ontario Government passed the Green Energy and Economies Act (Green Energy Act or GEA). This legislation paved the way for Ontario to eliminate the use of coal as an electricity generating resource, while simultaneously fostering the adoption of renewable energy. The major driving force of the Green Energy Act was, and is, a combination of programs known as the Feed-in Tariff and micro-feed-in Tariff programs (FIT and microFIT respectively). These programs have been the driving force of the renewable energy industry in Ontario for the past four years and continue to play a central role in the province's energy policy. Naturally, with any large shift in policy come a varying number of opinions and positions on its successes and failures. The Green Energy Act is certainly no exception and has caused an ongoing debate over not only whether or not the policy is effective and positive for the province, but if it infringes upon the rights of residents.

Public opinion of energy projects is well documented across many jurisdictions including Ontario. There have been and continue to be numerous attempts at theorizing the causes of public acceptance and opposition, yet still no clear answer has emerged. The implications of this are that it is difficult to respond and plan accordingly in order to successfully implement these new energy technologies. In Ontario, resistance of wind turbines in rural areas has been a major roadblock in its expansion and the government has been largely ineffective in its response. This has caused continuing expansion of the negative perception of these technologies.

Traditional thought would explain this opposition as a lack of knowledge about this technology. This knowledge deficiency causes residents to have unsubstantiated fears about harmful impacts and, therefore, they reject these technologies as a viable means of energy production. Furthermore, they would be

more strongly opposed to any such technology being placed in their community. If this were the case, the solution would be simple: educate those in opposition and they will quickly become supporters. Unfortunately, this is not the situation and ignores a highly insightful body of literature from the field of Social Psychology. Applying knowledge from this area of study to this dilemma, one begins to see that there are many explanations as to why someone would oppose these technologies and there is not only one way of addressing these concerns.

The current community engagement efforts conducted alongside renewable energy development and the policies behind them limit the effectiveness of community engagement. This prevents these efforts from realizing their full potential to create positive meaningful environmental, cultural and social change. Revitalizing these efforts to include more effective community engagement for small communities requires tailored approaches based on techniques utilized and understood by social psychology. The field of social psychology adds insight into how information is received and understood based on the characteristics of individuals and communities. It also helps us understand the affect of the content of the message (i.e. Framing), the environment it is presented in, and the manner it is presented (i.e. Face to face vs. pamphlet). Achieving high quality engagement will result in greater acceptance of renewable energy technologies and the rapid increase in their deployment. It will also foster the creation of communities that identify themselves with the goals of renewable energy development and a broader proenvironmental mentality.

To demonstrate how to improve community engagement, there must first be an understanding of what the policies that have resulted in this deficiency are and how they have contributed to robust opposition and resistance movements. It is then important to understand what factors lead a person and/or their community to accept or oppose renewable energy. The ideas of social psychology and how information is processed and interpreted by the human mind given a certain set of conditions it important to understand in order to tailor approaches to each community. Looking at a specific example from community engagement efforts in

Ontario, we will then use social psychology to critique their efforts. Finally, we must look at how to put all of this information together to form a framework that can act as the basis for effective community engagement strategies to be utilized when developing community renewable energy developments.

Section 1: Renewable Energy Policy in Ontario

An Introduction to Feed-in Tariff Programs

Although the main focus of this paper will be to understand public opposition and how it can be addressed in the most effective manner, in order to do this it is critical to understand what exactly is being opposed. This requires a thorough understanding of the policies that have been enacted in Ontario and their general criticisms. This section will provide this prerequisite knowledge in order to frame the issue at hand.

The Green Energy Act was designed to facilitate the development of a green energy economy in an effort to protect the environment, streamline approval processes, mitigate climate change, engage communities and build a leading green manufacturing sector (Cameron, 2011). The feed- in tariff program is the most important incentive for achieving these goals (Cameron, 2011) and, more generally, is thought to be the most effective policy mechanism for renewable energy development (Stokes, 2013). These programs tend to have three main components: a standard price for electricity generated (the tariff), a requirement that the power produced is used for the electricity grid (the feed-in) and all of this being guaranteed through a long term contract (Stokes, 2013). Not surprisingly, these three components align almost exactly with three keys to any renewable energy policy. These are: allowing any person, business or industry to connect a renewable system to the grid, requiring the purchase of this energy and mandating price and timeframe of this purchase (Laurent, Rickerson & Flynn, 2009). Although the majority view aligns with these principles, there is still much dissent geared towards the effectiveness and equity of FIT policies. Laurent, Rickerson and Flynn (2009) provide a robust list of common criticisms of FIT programs, as well as, rebuttals of each.

The list is quite extensive, but it is only necessary to mention the main arguments and those that apply to Ontario energy policy. The first of these criticisms is that renewable energy and related policies are too expensive. While this might be true when comparing cost per kWh, this does not account for the non-tangible benefits of renewable energy or the external costs associated with traditional energy sources. Another common criticism is that FIT programs involve arbitrary prices imposed by legislation. While legislation does determine the price, it is based on studies conducted prior to these policies being enacted and often changes throughout the life of the policy. Along similar lines, some would argue that having a system that encourages competitive bidding is better than one with standard offers as with a feed-in tariff. It is too simplistic to say that either is simply better than the other. Each has different benefits and weaknesses. Feed-in tariffs are more favourable for enabling the participation of more stakeholders, while competitive bidding favours larger developers and developments. Opponents also profess that FIT policies are more expensive than other renewable energy policies. FIT policies are able to reduce costs because investors can be confident in their return on investment. The long-term and guaranteed nature of these contracts reduces the high costs normally associated with high-risk investments.

The aforementioned criticisms tend to revolve around financial aspects of the policy, however, other criticisms focus on technical and job aspects as well. Critics argue that due to the inclusive nature of these policies, it encourages the production of projects that are not efficient in size, location and technology choice. This is an intentional component and result of the FIT policy in Ontario. The goal was to encourage varying sizes and locations in order to reduce Not In My Backyard (NIMBY) attitudes and to include a broad range of investors. As with many decisions (if not all), there are pros and cons of decisions. In the case of the Ontario policy it is very much intentional that the program is designed to attract broad investment of varying sizes and locations. Critics have also claimed that investment in renewable energy is not worth it because it requires fossil fuel as a back up anyway. Although wind and solar are more technically reliable than most sources of generation, no

source is perfectly reliable. With the proper geographic balance and management of generating resources, it is feasible that no fossil fuel back up is necessary. Finally, although renewable energy creates "green jobs," opponents will claim that other jobs are lost at a higher rate. As this paper progresses, renewable energy development will be shown to have the potential to create thousands of jobs. Studies in Germany have shown that their FIT policy has significantly increased jobs and prediction in the United States are high as well.

While FIT programs are each unique to the jurisdiction they are created in, these are common criticisms that tend to be applicable regardless of locale. There are a number of versions (something that will be discussed later); however, the following attributes comprise Ontario's version of this policy. First, there is "must-take regulations" that ensure renewable energy has priority on the grid over carbon based sources (Cameron, 2011). Furthermore, there is mandatory interconnection, which gives renewable energy access to the grid ahead of traditional energy sources (Cameron, 2011). As with any FIT program, there is guaranteed pricing and payments that are contractually assured. In Ontario, pricing is based on allowing profitability by basing it on the generation costs. One of the goals of the program is to obtain grid parity. This means that pre-scheduled reviews of pricing will reduce payments based on decrease in generation costs until parity is achieved. Finally, there is a domestic content requirement that stipulates a certain percentage of parts and labour must be sourced within Ontario for wind and solar projects. While this is the Ontario version of renewable energy policy, it is helpful to understand what has been done globally in order to compare and contrast ideas and determine what aspects affect public opinion and how.

Many other jurisdictions have renewable energy policies that have many similarities and important differences in comparison with Ontario. In 2000, the United Kingdom passed the Utilities Act, which created a legal obligation for utilities to provide some electricity from renewable sources (Hindmarsh, 2010). Although this was a generic policy, with broad goals, it marked an entry into legislation being used to shape the generation landscape in this jurisdiction. Similarly, Australia

passed the Renewable Energy Target in 2003, representing this country's first step toward renewable energy policies. Since then, they have also passed a solar homes and communities plan to promote the use of solar photovoltaic (PV) technologies, as well as FIT policies in some states and territories. China currently is making a strong push in renewable energy development. This includes subsidies aimed at promoting PV installations on buildings through its renewable energy law and Golden Roof and Golden Suns Programs (Moosavian *et al.* 2013). Japan has a FIT policy that acts on the promotion of non-fossil fuel sources and the effective use of the fossil-fuel sources being used (Moosavian *et al.* 2013). France has a FIT policy, green loans and tax incentives that promote renewable energy growth. The German renewable energy policy is centred on the National Renewable Energy Action Plan. While the USA has a number of policies that vary by state, including FIT policies, and at the federal level there are investment tax credits and a five-year accelerated depreciation plan.

Global policies tend to shift towards FIT programs or guaranteed pricing that is very similar to a FIT program. This begs the question, why? Why is renewable energy important to advance and why are FIT policies the best way to advance them? In the face of the rising global climate crisis, the world must take drastic measures to reduce carbon emissions. Currently, approximately 80% of greenhouse gas emissions come from energy consumption and 40% of this relates to buildings (Moosavian *et al.* 2013). To reduce this impact, there is a need to utilize clean sources of energy. Wind and solar are examples of this type of generation and wind is considered both environmentally and economically sustainable (Welch & Venkateswaran, 2009). While there is less evidence to suggest that solar is currently dual-sustainable in this matter, its cost parity is certainly improving. The promotion of these and other clean technologies through FIT programs is the most effective means of stimulating their development (Couture & Gagnon, 2009). It is able to achieve this type of development through setting the price paid to the producer based on cost of development and guaranteeing these payments for the lifetime of the technology. These conditions lead to rapid market growth (Couture & Gagnon,

2009). Despite the economic downturn at the time this policy was introduced in Ontario, Canadians were generally in favour of combating climate change. The GEA and the Green Energy Act were an answer to this call and provided a model for other jurisdictions to follow. In the face of critics claiming this will force prices higher, Achim Steiner, the executive director of the United Nation's Environment Program, summarized the importance of a long term vision bluntly: "For Ontario, it would be a tragedy if the economics of investing in energy transition were viewed as narrowly as that (Blackwell, 2011: pg 1)."

The importance of properly implementing a FIT program in Ontario and understanding what these policies entail is clear and it is now pertinent to focus the discussion on the policies that have shaped public opinion in Ontario with regard to renewable energy. The next section will outline the major energy policies in Ontario and the context they were borne out of. This will provide a clearer understanding of what we are discussing when we talk about public opposition of renewable energy in Ontario.

Renewable Energy Policy before the Green Energy Act

In order to fully understand the political context and its relationship to public opinion, it is important to outline the development of renewable energy policy in Ontario over time. For the first half of the 20th century, Ontario had very little diversity in its supply mix, which was almost completely dominated by hydroelectric power (Government of Ontario, 2010). It was not until the midway point in the century that supply diversified to include coal and then later nuclear. This worked well into the 90s, with problems arising in 1996 (Economics Week, 2012a). In response to this, the Ontario government introduced the Energy Competition Act in 1998 (Stokes, 2013). This privatized Ontario Hydro (Stokes, 2013) and created an electricity market in Ontario (Government of Ontario, 2010). This also resulted in Ontario Power Generation (OPG) assuming 70% of the generation infrastructure while remaining a public company. The immediate effect of the creation of a market was a steep spike in the price of electricity as Ontario

became a net-importer of electricity (Government of Ontario, 2010). In response to this sharp increase in price, the Ontario Government decided it would be necessary to undertake an overhaul of the energy system (Government of Ontario, 2010). This included increasing supply with clean alternatives by adding solar and wind, shutting down coal fired generation and adding conservation programs. In order to ensure the continued modernization of Ontario's supply mix and avoid price spikes, the Ontario Power Authority (OPA) was created in 2004 (Stokes, 2013). Its official mandate was to support long term planning and the procurement of electricity (Stokes, 2013). Up until this point there was very little influence being exerted outside of the government itself, however, the Ontario Sustainable Energy Alliance, (OSEA) began to gather steam with the changes being made.

OSEA was pushing for some type of feed-in tariff program to be instituted by the government. The result of this pressure was the creation of the first policy that resembled a FIT. This policy, known as the Renewable Energy Standard Offers Program (RESOP), offered 20-year contracts for renewable energy production (Stokes, 2013). There was no limit to how many contracts could be awarded and there was also a revolving community power innovation fund, meant to try and stimulate develop of smaller scale community projects (Stokes, 2013). While at this point it was officially the OPA's responsibility to undertake long-term planning, the Independent Electricity System Operator (IESO), agreed to undertake the responsible of the first long-term demand prediction. Released in 2005, the *10-Year Demand Forecast* predicted the electricity demand from 2006-2015.

The IESO report predicted a short-term downward trend in electricity demand due to high oil prices and a strong Canadian dollar (Independent Electricity System Operator, 2005). This was also the general trend in the previous term and, therefore would not be unrealistic to continue in the absence of major changes. Overall, they predicted an average growth of 0.9% per year, which would bring demand from 157TWh to 170TWh. This growth included a 0.7% peak increase in the winter and 1.3% peak increase in the summer. These numbers are based on a number of forecasting tools and assumptions. This includes the combination of four

provincial forecasts to generate economic indicators for the short-term (2005-2006) and combining these with population forecasts to predict behaviour for years further in the future. Furthermore, both normal and extreme weather scenarios are considered and paired with a method for predicting load uncertainty. It is also important to note that conservation is not considered in these projections, which also only account for current levels of demand response and not projected amounts. The final factor considered in the projections, was the historical demand trend between 1987 and 2004. Between this time demand increased an average of 1.1% annually, starting at 126.46 TWh and ending at 152.44 TWh. One other thing to note over this time, is that demand used to peak in the winter, but was now known to peak in the summer months instead.

Given this new mandate and the new projections, the Government of Ontario began to study how to increase renewable energy sources and their potential benefits. Prior to the culmination of these efforts with the GEA, the Ministry of Energy and Infrastructure commissioned the creation of a "solar task force." This group was mandated to study how Ontario might go about supporting the adoption of solar hot water for households in Ontario. Their work was presented in a report titled "Solar Task Force Report" (Solar Task Force, 2008). The report represented perhaps the first plans for a large-scale implementation effort for a renewable energy resource. It resulted in a proposal that would see 100 000 solar roofs built in Ontario over 15 years. It included three stages: priming the pump, broadening the market and reaching sustainability. This report is especially interesting and merits discussing its details because of how similar the ideas are to those found in the GEA itself, which will be outlined later.

The priming the pump phase was the initial phase of the implementation process and was to accomplish 5000 installations in three years between 2009 and 2011. The goal of this stage would have been to set the foundation for rapid market expansion of solar hot water heaters, much like the goals of early GEA policies to stimulate an industry to support the growth of a renewable energy sector. The key features of this phase were: a broad information program, to grow conservation

culture in schools, building code and other changes to make homes more compatible with these systems, build series of financial incentives, supporting manufacturing industry through legislation and research, involving municipalities in the planning process and beginning the process of enacting "right to light" legislation as part of a "green energy" act. This is the first mention of green energy act legislation within ministry documents.

The second phase, "broadening the market," was to take place between 2012 and 2017 and add an additional 60 000 solar roofs. While the authors anticipate the actions of this phase to be clearer upon the completion of phase one, they do offer four suggestions for actions to be undertaken in this time frame. These actions are: solidifying the legislation from phase one, increasing public education efforts, building manufacturing capacity through tax incentives and other mechanisms and facilitating the creation of "model suburbs." These suburbs would be created with each home having a preinstalled solar hot water heater. Essentially, this phase is focused on building on the education and new home legislation from phase one. It is interesting to note the central role education plays in the implementation process. This clearly reflects the idea that education is critical to not only increase public knowledge of the technologies, but also to the overall sustainability of the plan.

The third and final phase proposed in the solar task force report is reaching sustainability. At this time (2018 and beyond), the authors believe that energy prices will make these technologies cost-competitive and subsidies will either be eliminated or reduced. There is also a strong focus on industrial expansions with the goal of positioning Ontario as a major exporter of solar water heaters. The idea of creating the foundation to position Ontario ahead of other jurisdictions in terms of manufacturing new technology is reflected in the GEA with reference to generating technology. The importance of this plan is that it has many similarities with the GEA and likely had a strong influence on many elements later proposed by the Ministry of Energy.

There was one final influential report released prior to the enacting of the GEA. This report, titled "Building the Green Economy: Employment Effects of Green Energy Investments for Ontario," was meant to outline benefits of concentrated efforts to develop a green economy in Ontario (Pollin & Garrett-Peltier, 2009). The report was released the same year as the GEA was announced, but several months earlier. It is hard to imagine that the information was not critical to the announcement of the GEA as a foundation for its reasoning. The report focuses on employment, a common focal point of election platforms, and comments on three types of jobs created by renewable energy investment. The first type of job is direct jobs. These are jobs created within Ontario and represent the basic definition of a job. A second type of employment is indirect jobs, which are those associated with industries that supply intermediate goods. Finally, the report also discusses indirect employment effects. These benefits are the result of those with new and/or better paying jobs being able to spend money they now earn on services within Ontario. The report provides a chart outlining the employment gains from one million dollars of investment of different green technologies, which ranges from 14.1 to 16.4 direct and indirect jobs. These figures are dependent on three factors: labour intensity, local content and pay levels. It also concludes that if one were to focus on increasing these figures, increasing the local content would have the greatest effect.

The Green Energy Act: Early Years

With the knowledge that over the next twenty years 80% of Ontario's generating capacity would need to be replaced/refurbished (ClearSky Advisors, 2011) and the general support of battling climate change in the face of the economic downturn (Goar, 2008), the Ontario government announced its Green Energy Act. The announcement was made in October 2009, with the OPA beginning to accept applications for FIT contracts on October 1st (Bertoldi & Rodger, 2009). With this announcement came the beginning of many new steps for the Ontario government, the ministry of Energy and the related governmental organizations. This was the first time domestic content requirements were announced, setting a percentage of

parts and labour that must be sourced from within the province in order to be eligible for a contract (Bertoldi & Rodger, 2009). The requirements for wind projects would be 25% and were to increase to 50% in January 2012. For solar PV, small projects would require 40% and large projects would require 50%; these would both increase to 60% in January 2011. With the GEA, many new support projects were announced to facilitate the implementation of this policy with respect to both logistics and infrastructure. This included setting up a renewable energy facilitation office that would act as a one-stop access point to the information necessary to development a renewable energy project. It would also include a number of transmission projects, which would help cope with the addition of the multiple new power sources expected to be developed as a result of this legislation.

Also announced was the pricing schedule that would apply to FIT contracts. All of these contracts would be 20 years long (except hydro which would be 40) and range from 10.3 cents/kWh for landfill gas projects to 80.3 cents/kWh for residential rooftop solar projects (Bertoldi & Rodger, 2009). There would also be the opportunity for some producers currently waiting to finalize their RESOP contracts to be eligible for FIT contracts instead- something the OPA originally announced would not be possible. Furthermore, there would be additional payments added on to community and aboriginal projects. This aspect of the program, designed to increase participation of smaller local groups, also includes lower security payments and several programs aimed at facilitating their inclusion.

Four programs were announced that would target either aboriginal groups or community groups and provide aid in participating in the FIT program. These programs were discussed by Bertoldi *et al.* (2009) at the time the FIT program was launched. The first program is the Aboriginal Energy Partnership Program. This program includes three main focuses. The first is known as community energy plans and aims to give these communities the chance to identify its own needs, as well as, opportunities for renewable energy projects. The second focus involves the funding of the soft costs of renewable energy development, which include feasibility studies, business plans and other relevant studies. Finally, this program also will focus on

creating a network to facilitate knowledge and best practices education for these communities. The second program is really an extension of the first and is called the Aboriginal Loan Guarantee Program. As the name suggests, this allows these communities access to loans for renewable energy generation projects.

The third program launched to help facilitate participation of communities is the Community Energy Partnership Program. The main purpose of this program is to help with the developmental costs of renewable energy projects. It also facilitates the utilization of the price adder for these community projects. This adds a graduated incentive based on percentage of the project owned by the community for a maximum of 1 cent/kWh on top of the standard FIT rate. The Final program is called the Municipal Renewal Energy Program. The idea behind this program is the recognition that some costs of these projects will be borne by their municipalities. As such, the government of Ontario is prepared to offer monetary compensation to municipalities to ease this transition. These costs have to do mainly with connection issues. The main goal of all of this programs is to allow for renewable energy to be something that anyone or any organization can participate in. This is one of the key aspects the GEA and the FIT program have tried to accomplish that set it apart from many of the other legislation seen in different jurisdictions.

In July of 2010, the GEA was abruptly changed in a controversial decision to reduce the FIT rate for ground mounted solar (Nelson, 2010b). This change, announced on July 2, would see the rate drop from 80.2 cents/kWh to 58.8 cents/kWh- a 27% decrease. The idea behind this change was to bring the return on investment of this technology in line with that for rooftop solar installations (Nelson, 2010b). The change was justified based on the decrease in installation costs for the ground-mounted units. The FIT program attempts to foster an 11% return on equity for the life of the 20-year contract on all of its energy sources and this change was said to reflect this goal more accurately. The controversy arose because many stakeholders felt that the decision was made unilaterally and without allowing for a meaningful discussion. The confidence meant to be instilled by having a guaranteed 20-year contract was shaken, despite the fact that the OPA

allowed for a comment period after the announcement that would last until August 3 (Nelson, 2010b).

A second point of contention that arose, and continues to present an issue, revolves around the domestic content requirement. A report in November 2010 states that some Ontario and international manufacturers of solar PV components are against the existence of this clause (Nelson, 2010a). The reason behind their dissent is a study that concludes domestic content requirements on solar will increase the cost by 25% and result in nine billion dollars less investment and 9000 fewer jobs (Nelson, 2010a). Furthermore, the study also suggests that there will be a shortage of components by 2011. Cameron (2010) identified one of the major barriers towards the success of the FIT program as the revision of FIT rates. She did not mean that no revisions should take place, but rather referred to the fact that the process must be transparent and scheduled. This is exactly the reason the sudden decrease in ground-mounted solar was so controversial. It broke the trust of investors and made stakeholders question the stability of this legislation.

Despite some shaky aspects to the launch of this innovative legislation, there were other reports about the benefits this policy was creating and would create in the future. One such report was compiled by ClearSky Advisors Inc. (2010) and focused on the economic impacts of solar energy for Ontario. The report concludes that just 3GW of PV over five years would create 70 000 person years of employment, while having a minimal effect on electricity bills. Furthermore, by emphasizing the creation of PV generation, Ontario has the chance to establish itself as the leading solar jurisdiction in North America. It evaluates solar based on four criteria: job creation, other economic indicators, suitability to replace coal and costs. In terms of jobs, they conclude that PV creates twelve times more jobs than nuclear power and fifteen times more than natural gas or coal. With regards to other economic indicators, the authors conclude that PV could foster 7.9 billion dollars of spending in Ontario over five years, as well as hundreds of millions of dollars in tax revenue for the province and country. As a replacement for coal, PV has both advantages and disadvantages. The advantage of PV over coal is that there are

minimal health and environmental costs in comparison. The downside, however, is that PV is a form of non-dispatchable peaking power and must be used alongside a dispatchable peaking power source. Finally, the costs of solar PV generation do not result in as much production as other power, but create more jobs. For example, a one million dollar investment creates only 30-40% as much energy as other forms of generation and 2.4-6.4 times more jobs. In terms of costs to ratepayers, the study predicts that the 3GW of solar PV will cause an increase of 0.7% per year on electricity bills. In the long run, however, the development of local industry will decrease the costs of solar and its affect on ratepayers.

As the discussion in the province continued regarding whether or not the new GEA and FIT program were beneficial for the province, the first scheduled formal review was closely approaching. Just prior to the review some observers were urging patience. Harry Lehmann, the Director-General of Germany's federal protection agency, on a visit to Ontario, urged Ontarians to be patient with the GEA (Hamilton, 2011b). Using the well-known German example, he suggested that it would take several years before the real economic benefits were observed. He also suggested two flaws with the current program: the PV rate starting too high and not enough emphasis on community based projects. Right around this time Ontario's Auditor General released his annual report and was critical of the FIT program. One reason for this criticism was a failure of the government to evaluate the long-term costs of the program (Nelson, 2011b). The report suggests that the result of the FIT program will be an excess amount of supply at a higher cost causing a significant increase in ratepayers' bills. The report suggests that the original prediction of a 1% annual increase in bills will now be 7.9% each year for five years. Furthermore, the report goes on to claim that every job in the renewable energy sector causes two to four jobs to be lost elsewhere due to an increase in energy prices (Nelson, 2011b). With the tensions high, and many stakeholders and members of the public skeptical of the future of the GEA, the government officially began its review.

The Review

During this period, there were many stakeholders publicly voicing their opinions, as well as commentators speculating on the changes to be made. With public consultations closing on December 14, 2011 (Lemieux, 2011) and the final rules posted in August 2012 (Nelson, 2012d), this section highlights one year of speculation and gives a sense of what was expected from the general public and what the end result was.

The most important thing the review would look at was whether or not the GEA had achieved or started to achieve the intended goals of the program. Hamilton (2012) argued that indeed the first two years did not capture the intended spirit of this initiative. He argues that larger developers crowded out the smaller community-based projects that were meant to be encouraged. Furthermore, a failure of the Ontario Government to build proper support infrastructure (i.e. transmission and distribution networks) limited the number of projects that could be connected to the grid and did not maximize efficiency. Another huge problem identified by Hamilton was the implementation. This is mainly seen as a failure in three main aspects that were meant to be the strong suit of the program: transparency, predictability and stability. Moreover, even though the review was planned and predictable, it still forced the industry and investors to freeze until it was known what would become of the FIT program and the rest of the GEA.

One of the earliest changes that were identified as necessary was a change to the solar rates of the FIT program. Unlike the successful German model, the Ontario FIT program did not have a built-in annual decrease in rates allowing for the predictability and knowledge of future markets (Hamilton, 2011a). This meant developers had to speculate on the outcome of the review, not to mention what would happen if there was a change in government. It was also suggested that a cap be placed on the total capacity of solar and other power sources that could be added under the FIT program. This would force a more competitive bidding process for the limited amount available. Essentially, what the government needed to do was find a

way to have the prices reflect change in costs as industry developed. Although this was the intention of having reviews every two years, this would mean that, every two years, developers would have to hold their breath and hope for the best. An ongoing transparent and flexible pricing scheme would have to be developed. In response to this, it was thought that the reduction in tariffs should not change the return on investment, but should reflect the decrease in costs of products and installation (Lemieux, 2011).

The most comprehensive private review of the FIT program came from the Green Energy Act Alliance (GEAA) and was released in December 2011. The GEAA is composed of research organizations and advocacy groups who focus on fostering the growth of the sustainable energy sector in Ontario (Green Energy Act Alliance, 2011). The report summarizes there recommendations into three critical areas for improvement: setting aggressive targets for new renewable energy development, keeping the critical components of the FIT program while developing an automatic transparent process for rate reduction and involving local communities in renewable energy development. The goal of increasing the renewable energy target is the creation of a sustainable work force. The GEAA suggests a 7-year addition of 26% consumption from renewable energy with a focus on solar and community projects to achieve the best jobs numbers. They also propose a solution to the decreasing rates in a transparent and predictable manner. To do this, a 9% annual decrease in PV rates is proposed to a base number that fluctuates as a function of interest rates, silicon price and exchange rate. Finally, to achieve the goals of their third critical area for improvement, the GEAA suggests ways to involve local communities in energy projects. They propose four main ways to achieve this: encouraging meaningful engagement of through community power projects, setting up a foundation to support groups that do this, allowing municipalities to participate in generation projects and setting up a North American FIT coalition to create and stimulate an export market. They conclude with a list of technical recommendations, which support the decreasing and diversification of rates for both wind and PV in a transparent and stable manner, as well as other

recommendations that support the expedited growth of the renewable energy sector in a manner that facilitates the participation of community and aboriginal groups.

The review process allowed for the public, developers, trade associations, environmental groups and other stakeholders to submit comments via written submissions or through an online questionnaire. By the time the comment period ended in December 2011, over 150 written comments had been submitted with 2 900 online responses (Nelson, 2012c). One major theme, especially from developers of renewable power, was the need for a streamlined approval process (Nelson, 2012c). As discussed before, another major theme was stability and predictability. In a statement from the CEO of AMP Solar group that accurately reflects the industry's stance, he said the industry is just looking for certainty (Lindeman, 2012). Other items discussed by the broad stakeholder community were the need for PV rates to be placed into more groupings and the addition of incentives for installing PV on new home builds (Nelson, 2012c). As with the GEAA, renewable energy providers also wish to see PV rates on a digression path that drops over time until it is in line with other sources.

By March 2012, commentators had a good idea of the changes that would be announced in the coming month. The two main changes would be a decrease in pricing and changes to the control of siting decisions (Nelson, 2012e). As expected and requested, FIT rates were set to decrease to reflect the changes to the costs of production. It also seemed that the Ontario Government was going to give in to its rural critics and restore some power over siting decisions to the municipalities (Radwanski, 2012). This was not to be a veto power, however, as was being demanded by these critics (Radwanski, 2012). There was also an expected announcement on how the Ontario Government planned to turn this short-tern investment into long-term growth that includes the exporting of technology and information.

In April 2012, a draft version of the final FIT rules was announced. There would be a decrease in PV rates by 20% and wind rates by 15% (Lindeman, 2012). There would be no change to the controversial domestic content requirements (Lindeman, 2012). In August 2012 the OPA announced the final microFIT rules. Changes include: land use adjustments, how applications are prioritized and changes to the deadlines and fees (Nelson, 2012d). Solar rooftop projects are now required to be completed within 18 months as opposed to the original 3-year limit (Nelson, 2012d). Community and aboriginal owned projects will now be given top priority along with projects close to readiness, those that benefit the electricity system more than others, as well as how long a project has been in the queue (Nelson, 2012d). Overall, there were minimal changes, but this was a clear attempt from the Government of Ontario to accommodate the majority of comments given in the review.

The Green Energy Act: The Present

The review process and the resultant changes were met with mixed reactions from the various stakeholders. Manufacturers of solar equipment, for example, were still facing a bottleneck in the connection of projects (Spears, 2011). This prompted some to go so far as to say they would be forced to shut down and leave the province should the new direction not address these concerns adequately. Meanwhile, the Pembina Institute released a report acknowledging that although prices of electricity have risen, this was an inevitable increase regardless of what source was chosen (Nelson, 2011a). These reactions were published almost immediately after the review, however, and were not a reflection of any tangible changes to occur as a result of the process. It would not be until the following year that organizations would publish reports with varying degrees of support and dissent.

One example of such opposition is from Wind Concerns Ontario. In a statement from their president, he claimed that Ontario has all the clean power it needs from nuclear and hydro generation (Nelson, 2012b). It is their belief that these “industrial wind turbines” are unnecessary and being forced through approval

processes to be placed near their homes. This is especially concerning for them due to their belief that theses turbines pose adverse health affects to nearby residents (Nelson, 2012b). These types of concern were meant to be addressed with the new rules, but it became apparent that for most dissenters the steps taken in the review were not adequate.

Another organization that came out against the FIT program despite the review was the Fraser Institute. In a report released in April 2012, they stated that Ontario consumers will pay an additional 285 million dollars annually and lose 21 000 full time jobs as a result of the current renewable energy policy (Marketwire, 2012). Instead of the subsidies for renewable energy offered through the GEA and FIT program, the Fraser Institute report suggests a market-based approach in order to find the most efficient mix of generating technology. To achieve this they recommend the following actions: abandoning the current renewable energy portfolio, stopping the promotion of any power source with incentives or subsidies, improve transmission over long-term, remove uncertainty about carbon emission limits and establish clear and stable energy policies and regulations.

One of the other controversies surrounding the GEA was coming from outside of Ontario in the form of World Trade Organization (WTO) complaints. In 2012 WTO ruled on complaints filed against Canada as a result of the domestic content clause in the FIT program. Separate complaints filed by Japan and the European Union in 2010 and 2011 respectively, claimed the domestic content requirement discriminates against foreign suppliers in violation of the General Agreement on Tariffs and Trade (GATT) (Nelson, 2012a). The ruling in 2012 is against Ontario's policy, but the Ministry of Energy was prepared to ask the federal government to appeal this decision (Nelson, 2012a). It is difficult to speculate how this will affect the future of the policy, however, some argue that this challenge reflects the success of the program. First and foremost, the Ontario Government's position is that because energy is a government procurement, it is not covered under the GATT (Neumann, 2012). Furthermore, because of the International Energy Agency's prediction that renewable energy will be the dominant form of

electricity production by 2035 and the success Ontario has already had (i.e. 20 000 jobs, billions of dollars in investments and 30 PV manufacturers), international complaints are based on fear that Ontario will dominant the global market as it grows (Neumann, 2012).

There were also organizations that came out in support of the changes and the finalization of the FIT program review. Environmental Defense applauded the changes as measures that clearly reflect the Ontario Government's commitment to increasing renewable energy capacity and increasing jobs (Economics Week, 2012b). It is their belief that the GEA and its FIT program are responsible for reducing greenhouse gas emissions to two-thirds lower than prior to their enactment. They also attribute the creation of 20 000 jobs to this legislation.

Whether or not one agrees with this policy, energy planning in Ontario, including the current FIT program, is guided by the Ministry of Energy Planning Brief, developed over the 2011-2012 year. This document outlines the current vision and mandate of the ministry and the means with which these will be achieved. The basic component of this report are the three main deliverables: ensuring a clean, reliable and competitively priced energy system, building a conservation culture in Ontario and building the clean energy economy in Ontario (Ministry of Energy, 2011). It calls for the same amount of capacity called for in the FIT program for renewable energy, 10 700MW, a number also seen in the 2010 Long Term Energy Plan. To achieve these goals the ministry will utilize legislation that focuses on investments in renewable energy, upgrading infrastructure, increasing conservation and phasing out coal-fired generation (Ministry of Energy, 2011). There is also a strong focus on continuing with the domestic content requirement of the FIT program as a means to move Ontario as a global leader in renewable energy technology.

Current microFIT Overview

Two sets of updated rules for the micoFIT program have been released since the first review. The first was released in July of 2012 and announced that formal reviews would take place annually in the future (Ontario Power Authority, 2012). As a result, new rules were also released in August of 2013, which, although quite similar to the previous years, did have several important differences. The following is a description of the current (August 2013) rules, but these important differences will also be highlighted. MicroFIT projects must be located within Ontario, have a capacity of 10kW or less and be derived from one of the following sources: biogas, biomass, landfill gas, solar PV, waterpower and wind (Ontario Power Authority, 2012). In the second version of microFIT rules, the domestic content requirement was only applicable to solar projects and was set at 60% (OPA, 2012). In the current version, while the requirement is still applicable for PV projects, it is different for each of the three eligible technologies and ranges from 19-28% (Ontario Power Authority, 2012). The rates have significantly decreased since the review and are now 39.6 cents/kWh for rooftop solar, 29.1 cents/kWh for non-rooftop and 11.5 cents/kWh for wind (Ontario Power Authority, 2013a). There is still a price adder for projects owned by aboriginal groups (1.5 cents/kWh), community groups and municipalities (both 1.0 cents/kWh) (Ontario Power Authority, 2013a). These adders are for projects that these community groups hold more than a 50% share in and are halved when the community owned equity is only between 15% and 50%. The pricing reductions and changes to the domestic content rules represent the major changes that have occurred since the beginning of the microFIT program.

Current FIT Overview

The important differences between the microFIT and FIT programs are the size of the projects and the applicability of domestic content rules. The basic eligibility requirements are very similar to the microFIT rules, but apply to renewable generating facilities that have a capacity above 10kW and do not exceed

500kW (Ontario Power Authority, n.d.). There are still three eligible types of solar PV, as with the microFIT program, with domestic content requirements ranging from 19-28% (Ontario Power Authority, 2013b). The domestic content requirement for all wind projects is 20% (Ontario Power Authority, 2013b). Contracts are still 20-years long for both solar PV and wind, but the price paid is slightly different with rooftop solar being divided into two size categories: over 10kW to equal to or less than 100kW and those above 100kW (Ontario Power Authority, n.d.2). Rooftop solar in the smaller size category has a rate of 34.5 cents/kWh and a rate of 32.9 cents/kWh for those in the larger size. Non-rooftop solar has a single price for projects over 10kW: 28.8 cents/kWh. Wind rates are 11.5 cents/kWh for all projects over 10kW (Ontario Power Authority, n.d.3). As with the microFIT rules, community, municipal or aboriginal owned projects are eligible for price adders, which are the same as in the microFIT program (Ontario Power Authority, n.d.4).

Future Outlook

The most recent Long-Term Energy Plan released in 2013 best defines the future outlook of the Ontario energy policies. The future of the GEA and renewable energy lies within this document, however, it cannot account for uncontrollable future events such as elections or significant market events. It does represent the government's current vision for the future of electricity and thus it is important when considering the role of community engagement moving forward. This report purports to be designed to balance cost effectiveness, reliability, community engagement and a takes a special focus to conservation and demand management over new builds (Government of Ontario, 2013). There are several key elements outlined to achieve thee goals, some of which are relevant to the intended purpose of this paper. The LTEP aims to support a number of initiatives with regards to community outreach and behaviour changes. There will be information and incentives for using efficient products, efforts to make it easier for the consumer to be aware of their consumption, a social benchmarking program and increasing the resources for conservation in school curriculums. Social benchmarking is an attempt

at applying social psychology theory to affect positive changes in behaviour. It will allow ratepayers to see how they compare to other similar consumers, which in theory draws people to act more like the social norm. This is only effective if the norm is more aligned with the goals of the program.

The LTEP also states that there will be annual reports in order to update supply and demand trends and predictions. This is important because of the difficulties the government has experienced in the past with basing its actions on outdated prediction information. There will also be no new nuclear power added, however, refurbishments are planned for 2016. Instead of new nuclear, there will be 20 000MW of renewable energy capacity with an increase in hydro as well. The Ministry also plans to use natural gas and combined-heat and power as flexible supply to support their renewable energy efforts.

With regards to the FIT program, there will be continued decrease in FIT rates and an enhanced ability to make wind power dispatchable. In order to facilitate more community and aboriginal involvement, regional plans and the encouragement of community scale planning will be emphasized.

There are other ideas about how to improve the energy future of Ontario. One of these is based on a Pembina Institute Report titled "Renewable is Doable." In the report, that authors argue that because of falling demand in the last four years and the increase in renewable energy, we now have different electricity needs (Weis, Stensil & Stewart, 2010). These needs should allow for the opportunity to not only eliminate coal as a fuel source, but also to replace nuclear generation with renewable energy. They argue that this switch would provide the following benefits: cost, jobs, reliability, flexibility and economic protection. Cost and job advantage are based on their calculations that nuclear costs 12-48% more and choosing renewable energy will create 27 000 jobs over ten years. The technical reliability is higher for renewable options, while adding power in a gradual manner is more suited to match the gradual changes of supply and demand. Finally, cost overruns are the responsibility of the developer, not the province, which is not the case for nuclear

power options that have cost the taxpayers millions of dollars as a result. There are a number of reasons offered as to why nuclear should be replaced that range from no reactor ever being completed on time so far in Ontario to the number of major cost overruns. The conclusion is that nuclear is not right for the province. This leads to a series of recommendations: replacing Pickering Nuclear Reactors with renewables, conservation and combined heat and power, abandoning (or at least delaying) new reactors, add combined heat and power to FIT eligibility and mandate the OPA to replace nuclear with cost-effective renewable options.

Jason Langrish, the president of The Energy Round Table, believes there is a simple fix to the GEA and that is to eliminate the domestic content requirement (Nelson, 2011b). He believes that the goal of creating a sustainable green energy industry is not the true intention of the act in its current form. Instead he believes the act is meant simply to achieve the creation of manufacturing jobs in a quick manner while replacing coal. He breaks down the major errors of the GEA into four missteps. The first of these is the continued overestimation of electricity demand causing the addition of too much generating capacity. The second is the approval of a deal that saw Samsung receive the largest contract in the FIT program, which effectively blocked the participation of other companies and reduced competition. Another error, and his main point, is the high domestic content requirement that has caused trading partners to close their doors to exports as a result. Finally, because of the closed markets, companies are less likely to set up research and development here without chance of exports. His conclusion is that a sustainable green energy economy requires both imports and exports and that the current domestic content requirements are holding the province back from achieving this goal.

The Canadian Solar Industries Association (CanSIA) also released a report expressing their views on the future of solar in the province (2011). Based on the fact that 70% of electricity needs to come from refurbished or new sources and an expected 15% increase in demand ending in 2030, as well as figures from the LTEP, CanSIA envisions 1.5% if the supply mix to come from PV (ClearSky Advisors, 2011).

The result of this will be 12.9 billion dollars of investment, 74 000 jobs and a monthly increase of $4.91 by 2018. In general, PV creates eleven times more jobs than natural gas or coal per electricity generated and 4.8-5.3 times more per dollar invested. The remarkable part of these figures is that they do not account for externalities or creation of an export market, both of which would dramatically favour PV over conventional sources of generation. The only category in which PV lags behind gas and coal is electricity produced per dollar. PV is capable of generating only 32-34% of the same investment in coal or gas. Given the added economic benefits of PV CanSIA believes that it will be a critical part of the future supply mix in Ontario.

Conclusion

Throughout the implementation of the policies discussed in this section, there has been growing political and public opposition. Although there have been some technical successes such as job growth and a cleaner (coal-free) electricity generation system, these cannot be the only measure of successful policy. Leah Stokes writes that enacting successful policy requires more than technical and economic success (2013). She discusses four critical aspects of renewable energy policy that go beyond this conventional means of thinking. The first thing to consider is that support for the technical ideas does not necessarily reflect what grassroots support or opposition will look like during implementation. Second, information gaps between the government and private sector must be considered and addressed. A third aspect is the maintenance of tensions between stability and flexibility. Finally, Stokes discusses the importance of being aware of the international political conflicts that can occur from innovative legislation. These ideas, among many others will be the focus of the remainder of this paper, which will unravel how people have reacted to the above policies, why they have reacted this way and how to utilize social psychology to better engage communities and appease opposition.

Section 2: Understanding Public Opinion of Renewable Energy

Now that a thorough understanding of the policy issues has been provided, it is necessary to focus the discussion on the particular elements of the policies that fuel opposition and acceptance and how these positions manifest themselves in the province of Ontario. The goal of this section will be to achieve an insight into these issues and the type of person that is likely to fall on each side. Case studies will be cited from global and local sources to help build this understanding and there will be a discussion about the importance of public opinion with regards to renewable energy development. It will be shown that there are significant issues between the policy and the public experience with its implementation and that this is preventing this policy from achieving its full potential.

There are two main ways through which public opinion manifests itself with regards to renewable energy: acceptance and opposition. Within these two categories, opinion is further divided into acceptance/opposition of the new technology in general and acceptance/opposition towards personal use and behaviour changes to accommodate it (Sauter & Watson, 2007). This section will look into the reasons people take the stance they do, as well as, qualities these people share. Furthermore, it will look at how to categorize these people and briefly discuss attempts at understanding what contributes to these positions. Although the majority of this section will focus on wind, this is only because it has been exhaustively studied in comparison to its solar counterpart. The main reason for this discrepancy is the disproportionately higher capacity of wind power compared to solar PV. Some authors, however, speculate that the opposition problems faced by wind will be faced by solar PV as it becomes more common. This section will also look at case studies of analysis done outside of Ontario before delving into understanding how public opinion has developed in Ontario and where it stands now. To conclude, the importance of this information will be discussed.

Understanding Acceptance

As previously mentioned, acceptance can be divided into two types: general acceptance and acceptance/active use of renewable energy technology. To understand acceptance, it is important to understand the reasons people choose to accept these technologies and the qualities of these people. It is equally important to come to an understanding of the different categories these people fit within and two frameworks utilized to understand all of these things. There are many reasons people accept renewable energy technologies, these include: financial, environmental and sustainability reasons. There are also reasons that relate to people's direct involvement with these technologies and general interest in technology and its ability to improve society.

Financial reasons are one of the major motivations for people accepting renewable energy in both dimensions (Faiers & Neame, 2006; Sauter & Watson, 2007). This type of reasoning refers to any case where the person believes it makes economic sense for them or their jurisdiction to adopt this technology. In a consumer analysis, Faiers and Neame (2006) found all adopters were motivated financially to some degree. Furthermore, Sauter and Watson (2007) found that high-income individuals were more likely to adopt these technologies as a secure investment (2007). In this case, it was less likely to be seen as a means of obtaining wealth, but rather as an option available for those with disposable income to invest. The success of the Ontario FIT program hinges on financial motivation as being critical to the deployment of renewable energy, but motivations are much deeper than economic sensibility.

Another equally important motivator for support and/or adoption of renewable energy technology is environmental reasons (Faiers & Neame, 2006; Dobbyn & Thomas, 2005; Sauter & Watson, 2007). Faiers and Neame (2006) found that all people were either environmentally or financially motivated in some capacity and these should be considered the two primary motivators. In fact, for people they call "early motivators," motivations stemming from a passion for the

environment was the main focus. These people are those who had the knowledge and practicality to adopt energy efficiency measures in the past, but not to the point of purchasing a solar system. Similarly, HUB Research Consultants (2005), describe a group known as committed environmentalists to describe those who are motivated environmentally to install renewable energy technology. These people are defined by their desire to get behind something they believe in, a wish to be pioneers in the industry and a desire to set a tangible example that others may follow to help the environment. While again this is an important motivator, it is not plausible to say that everyone who supports environmental causes supports renewable energy. However, it is clear that there are some motivations and qualities that are common among those who do support these technologies.

Other than financial and environmental motivations, there are several secondary ones that are commonly found in supporters of renewable energy. Some of these motivations are: a desire to live sustainably, being directly involved in projects and being interested in technology. Faiers and Neame (2006) and Dobbyn and Thomas (2005) found that alongside a financial or environmental motivation, many adopters of this technology also expressed a desire to achieve sustainability. This seems to be related to a feeling of satisfaction achieved through the knowledge that you are capable of producing your own electricity and not being dependent on the government or any outside supplier. Alongside groups such as "committed environmentalists," there are also those grouped in a category called "independent." These are those people identified by the HUB Research Consultants (2005), as adopting technology in order to be free from suppliers of energy. These authors also identify a group called "technofiles." These are people who invest in the technology purely out of a strong interest in it. Other characteristics of this group include the need to have a project, being sufficiently affluent and seizing upon an opportunity to begin one with newly affirmed access to grants. Similarly, Sauter and Watson (2007) have a identified a similar group of people they call "innovators." These are people characterized by a high degree of technical knowledge, passion for new technology and a belief that technology is a strong contributor to the betterment of society.

Finally, there are those that are accepting of the technology because they have been presented the chance to participate directly in it. Both Rogers *et al.* (2008) and Douglas *et al.* (2008) find that communities are more accepting when involved in the planning phase and also when they will directly benefit from the project.

On top of these emotional and innate motivators, there are qualities more of a demographic nature. The examples that will be discussed are by no means an exhaustive list, but are meant to highlight the types of factors that must be considered when attempting to understand one's position on an issue such as renewable energy. One such example is gender. It has been found that females are less likely to think that PV installations negatively affect the landscape (Faiers & Neame, 2006). Another such factor is age, where it has been found that people over the age of 50 are more likely to think the long payback period is a major issue when considering installing renewable energy technology (Faiers & Neame, 2006). Also identified in this study was the fact that lower income individuals tend to think PV installations will add value to their property. Finally, stigmatized and polluted communities are more willing to welcome a wind turbine or turbines in their community, as they feel it can revitalize their image (van der Horst, 2007). There are a number of qualities that can apply to specific communities or individuals that may affect their perceptions of these technologies. It is important to consider these differences and others, when developing a community engagement strategy.

Another interesting perspective that helps understand acceptance is a rhetorical approach such as the one Barry *et al.* (2008) used in their analysis on the support and opposition rhetoric around renewable energy development. They identified several themes that these discourses centre around that are recognized by the type of language used. The first of these themes is the assumption towards acceptance. The authors found that supporters felt that everyone must assume the need for renewable energy and if not, facts would set them straight. A second theme focused on language of a rational and scientific nature. There was a sense that the entire discussion could be broken down to a discussion of facts regarding climate change and energy security. Furthermore, this leads to the idea that all siting

decisions should be determined scientifically. There was also discourse around the urgency of the threat that climate change poses and the need to act immediately. Finally, there was also language around support for ecological modernization. This included conversations that focused on renewable energy development as a business opportunity and those that marveled at the innovative nature of this technology.

Understanding Opposition

As with acceptance, opposition can also be divided into general opposition of renewable energy technology and refusal to use these technologies on an individual level. Unlike acceptance, these two dimensions of opposition are quite distinct from one another. The majority of reasons people who are not willing to purchase and use wind turbines or solar PV installations are financial reasons. One of these reasons is the long pay-back period involved with these types of contracts (Dobbyn & Thomas, 2005; Faiers & Neame, 2006). Often contracts do not cover costs and become profitable for many years after the start of the contract. Combining this with the high upfront capital costs (Dobbyn & Thomas, 2005; Faiers & Neame, 2006) causes many people to be skeptical of the economic sense of this investment.

The other major source of opposition on this scale stems from a lack of awareness of various qualities of renewable energy installations. While renewable energy is thought to be much more technically reliable, especially in the long term (as discussed in Section 1), many potential consumers lack confidence in the long-term performance (Faiers & Neame, 2006). There is also a lack of awareness with regards to how much energy one consumes and what the financial and environmental costs are. This is reinforced by the bills being received long after the energy one is being charged for is consumed (Dobbyn & Thomas, 2005). Finally, there have been reports of people who simply feel like their property or jurisdiction is not suited for these technologies, when often it can be made to work quite easily and profitably (Dobbyn & Thomas, 2005). The Hub Research consultant report (2005) concludes that you must convince someone of the following things in order

to sell them renewable energy technology: not unattractive, are affordable, current grant levels are enough, are maintenance free, may increase property value and that there is a simple installation process that involves minimal disruption.

Jegen and Audet (2011) demonstrate that previous work on more general resistance to wind acceptance can be divided into three categories: environmental concerns, planning process and territorial development and public opinion and attitudes. The first category involves sociological issues, technical knowledge, the impact of media and opinions of friends and relatives. As demonstrated in Rogers *et al.* (2008), a technical knowledge deficit can take different forms, including the belief that a distributed power system is inadequate and a lack of awareness of similar successful projects. Eltham, Harrison and Allen (2008), also discuss a general knowledge deficit regarding these technologies as a main factor causing concern. Furthermore, this extends into beliefs that relate to the perceived impacts of installation, which are often largely misunderstood and thought of quite negatively.

Jegen and Audet (2011) define the process and territorial development category as including noise perception, visual impact, lack of coherence in processes and NIMBYism attitudes. A 2005 study, concluded that noise and visual problems were the most cited among complaints (Devine-Wright, 2005). These issues are a common theme in the vast amount of literature that has continued to analyze these issues, but it does vary between populations, as will be seen in the case studies later in this section. Procedural issues are one of the other major categories of issues that are often cited in the literature and can take many different forms. Studies often find a lack of trust between communities and developers or other outside stakeholders attempting to initiate change locally (Hindmarsh, 2010; Eltham *et al.*, 2008). This can be caused by a number of institutional factors such as residents simply being unaware that a consultation process even occurs (Hindmarsh, 2010). It can also be caused by a complete lack of forum to oppose the projects and add meaningful insight, whether or not this is the perception or the reality (Eltham *et al.*, 2008). This

generally leads to a lack of communication between developers, governments and the communities, which is also a major source of resistance (Devine-Wright, 2005).

While a number of studies have concluded that NIMBYism is the dominant mindset responsible for resistance in this domain, their reasoning varies. This leads one to conclude that NIMBYism is more accurately defined as an umbrella term that covers a variety of social issues locals may have in opposition to a development. Haggett and Toke (2006) propose that it is more than a mere resistance based on NIMBY attitudes, but rather that there is an innate value attached to the land at the root of these emotions, while Eltham *et al.* (2008) stress that landscape type is the most important factor in determining resistance based on siting and perceived visual impacts. Similarly, Devine-Wright (2005) also concludes that landscape and context are the main factors behind this type of opposition. It is not proximity of the proposed site that influences the strength of resistance, but more so the threat to the rurality of the lifestyle and home (van der Horst, 2007).

The third and final category is public opinion and attitudes. There are two main influences on one's personal opinion that go beyond their own knowledge: opinions of friends and relatives and the media. Devine-Wright (2005) cites studies that demonstrate that the viewpoint held by those close to a person may be the single most influential factor on one's own beliefs. There are of course a number of other factors that would lead to similar views being held by those in the same community, but this does seem to be a robust indicator of opinion. This is also related to the type of media one is exposed to and the influence this will have on one's position. While much media claims to be unbiased, this is clearly a naïve position to hold. If media is the main source one uses to get their information this will have a significant impact on their opinion and because the vast majority of people interact with media in someway even if it is a local newspaper, this is a very important factor in understanding opposition (Eltham *et al.*, 2008).

There are several theories that coexist with the factors mentioned above that round out the current understanding of opposition. One of these theories is referred

to as the social-gap (Bell *et al.,* 2005), individual gap (Bell *et al.*, 2005) or value-action-gap (van der Horst, 2007). Although they all share different names they describe the same phenomenon. They describe cases where a person or community has a positive view of renewable energy in general, but this does not translate into acceptance or use of this technology in their community and/or home. Van der Horst (2007) describes the value-action gap as being caused by the inherent morality associated with green technologies such as renewable energy. He explains that many people believe it to be politically incorrect and socially unacceptable to publicly denounce the expansion of use of these technologies as it implies a lack of care for the future generations. Therefore, he continues, people are likely to express their support, but not necessarily act in the manner one would expect based on this expression. Thus, a "gap" between professed values and actions is observed.

Bell *et al.* (2005) describe and offer explanations for both the observed social-gap and individual-gap. While the value-action gap discussed before could be said to encompass both of these terms, the authors in this case have decided to be more specific in which aspect they are discussing. Social-gap is the term used to describe the discrepancy observed in the high public support, but low success rate of planning applications. Alternatively, the individual-gap refers to the contradiction of a person who has a positive attitude towards renewable technologies, but objects to a specific project. They offer three explanations to the cause of these observed phenomenon. The first of these explanation is the 'democratic deficit' explanation. The basic tenet of this explanation is that a small but vocal minority influences the decisions, but does not reflect the general wishes of the community. They argue that this is possible due to the nature of the planning process where consultations are held after the decision has been made. This is more likely to draw those who oppose the project rather than those in favour.

The second explanation is the "qualified support" explanation. Here the authors suggest that while people generally support wind energy and its development, this is not without qualifications. Since it is likely that survey data reflecting a positive opinion did not allow for the surveyed to include their

qualifications, the information is skewed form the beginning. However, if the developer is able to meet these qualifications then theoretically no gap would exist. This highlights the importance of a meaningful engagement process and the establishment of trust between all stakeholders.

The final explanation offered by Bell *et al.* (2005) is the "self-interest'" explanation. This is essentially the basic NIMBY idea, where one generally supports development, but opposes it occurring in their communities for self-interest reasons. At its root, this explanation requires a person to believe that the contribution to the overall good is not worth the deficit it will cause to their person. The authors describe this as a debate between collective rationality and individual rationality occurring within a person. If this is the case, then presenting a development in a way that shows a person how they benefit is necessary. This can be through playing on their sense of environmental stewardship or financial incentives.

Another way one can attempt to explain opposition to wind power development is through the application of Habermas' Social Theory. Fast (2013) applies this theory in an effort to understand deliberations regarding a wind development in Ontario. The theory describes how human activities are coordinated and focuses on the role of reason in legitimizing these actions. The theory relies on communicative action that stresses the function of language and states that actors evaluate rationality based on facts, norms and feelings. The author found that three main groups were influencing the discourse and discussions around the rationality of the proposal: grassroots groups, publicly acting associations and the state/actors on behalf of the state. Furthermore, he found that in the realm of language, often discussions were being held in two different dimensions. He describes this as people talking past each other, with half using technical language and half using social language. Fast concludes that it is not good arguments that sway people, but manipulation in the form of political power. He suggests three ways to avoid opposition: sensitivity to distortion in communication, familiarity with local cultural values and norms and having citizens become more technically knowledgeable.

One final method that has been applied to analyze opposition is a rhetorical approach. The "Understanding Acceptance" section discussed the rhetoric that supporters use to discuss renewable energy, but Barry *et al.* (2008) also developed themes observed in those that oppose this technology. The first of these themes is sacrifice and disempowerment. In this theme there is an emphasis on local-values associated with the landscape and the idea of sacrificing these values for the national or global good. The opposition presents these sites and communities as vulnerable entities that are under attack from larger and more powerful opponents. Essentially, they describe their plight as an archetypal David versus Goliath story. Similarly, there is also a theme of a lack of trust in government, the regulatory processes and the developers, which, when combined with the first theme, leads to the use of war rhetoric and an "us" versus "them" narrative. There is also an emphasis on the foreignness of the turbines and the ideas that resulted in their creation and use. Industrialization of a rural environment is another common theme that is combined with the idea of taking something publicly owned a privatizing it. This is also seen in the case of an off shore wind development proposal in Cape Cod (Baxter, Morzaria & Hirsch, 2013). Finally, opposition rhetoric involves the professing of the fact that they are not motivated by self-interest, but simply skeptical of outside forces wishing to impose change. They use cultural rationality- the importance of personal, emotional and value based experiences- to establish a morality to their cause.

With regards to acceptance and especially opposition, they can take many different forms that are dependent on the person and the context they form their position in. This adds to the necessity of individualizing community engagement efforts as much as possible given the uniqueness in which opposition manifests in each individual and community. The case studies presented in the next section, as well as discussing acceptance and opposition in Ontario specifically, will help demonstrate the differences that can exist between different jurisdictions, demographics and the other unique characteristics of these localities.

Case Studies: Public Opposition Around the Globe

This section will look at multiple studies that have documented resistance to renewable energy development in a variety of jurisdictions. There are a number of similarities between studies, but an equal number of differences. Comparing these cases and those within Ontario show that despite common themes in resistance, it is the differences that make addressing these concerns more difficult and require special attention.

One early example of a study dedicated to analyzing resistance of wind turbines was completed by Strachan and Lal (2005) and focused on communities in Scotland. The renewable plan implemented here actually stressed the importance of societal acceptance for its success, but the authors consider it to have failed in this regard. Opposition can be summarized into five points of contention: the scarring of the natural landscape, issues with planning consents, land use, noise pollution and the endangerment of wildlife. While this opposition is pretty general, the authors note that the real problem is the lack of success experienced with engagement efforts before, during and after implementation. It is their opinion that the most significant failure of the policy was a failure to educate the public and other interest groups on these issues. One example of this is a table that shows what the sounds of more common items are compared to the noise from turbines. This very simple, yet effective communication tool was not seen in any literature from the government or other supporters of wind expansion. It is this ignorance that caused such extreme contention summarized by one sentiment from an anti-wind proponent who claims that placement of turbines nearby will ruin residents' lives.

Another early example of a study documenting resistance to wind turbines is a study of the newspaper coverage surrounding a dispute in Cape Cod regarding offshore wind development. Thompson (2005) utilizes the rhetoric found in local newspapers as a lens with which to view the contentious debate that took place. This is an interesting perspective because it demonstrates the way language is used to shape an argument (i.e. Habermas' Social Theory) and the differences between

language on both sides. This is similar to the rhetorical analysis discussed earlier in the understanding acceptance and opposition sections. In this case the author found a number of themes that form the opposition rhetoric in local papers. The first example is the lack of discussion regarding the global impacts of climate change. The author speculates that this and the lack of widespread discussion has to do with the complex nature of these issues and the trouble the general public has with believing cause and effect that cannot be directly perceived. The vast majority of discussions centered on a more simple aspect of the debate- aesthetics. This appears to be a more relatable and easily understood dynamic than the more important social, environmental or economic issues revolving around this development. Another issue regarding language was the use of war rhetoric. This type of language makes people choose a side and leaves little room for people to see the pros and cons of the development from a neutral perspective. Furthermore, the newspaper articles tended to use industrial language to describe turbines rather than more eco-friendly terms. The final commonality in the rhetoric found in local newspapers was the idea that accepting the development was privatizing a public resource. This is ironic, as the author points out, because those living along the shore are able to enjoy the benefits of this public resource with no payment towards the government. There was also a distinct lack of independent expert opinions sought out by the newspapers. This is another way the newspapers shape the "us" (community) versus "them" discourse and support the notion that the local population knows best and must defend themselves from outside development and views.

A study conducted on populations in the United Kingdom and the Netherlands in 2007 by Wolsink explored the nature of public attitudes towards wind energy. As discussed before with the idea of the social gap, the author found that despite general support throughout these areas, there was consistently local opposition. Unlike the previous examples, the author states that there is no relationship between general level of knowledge and attitudes. Instead, the issue is that global arguments do not work when discussing local issues. The localization of a project does not create resistance, but it does cause those close to the matter to

pay closer attention and begin to question the process. Wolsink believes that the critical factor in opposition is not selfishness, which is more aligned with a NIMBYism explanation, but rather that a fair decision making process occurs and no injustice is perceived. Holding consultations after siting choice has already been made is a major trigger for these feelings of injustice. Therefore, the author concludes that the success of wind developments rests on their ability to accommodate public concerns and being inclusive during the decision making process. Furthermore, the best way to facilitate developments is to work closely with the community to build institutional capital, which the author defines as knowledge resources, relational resources and the capacity for mobilization. Another important element from this study is that it was found that noise level is not an issue for those living near turbines. The perceived nuisance is a manifestation of the visual impact on the landscape. Due to the fact that visual impacts and siting choices were shown to be the most influential opposition factors, developers must strive to find sites that are acceptable to everyone, even in areas with a high degree of conflict. It is matter of taking the time to seriously consider and engage the various perspectives in order to achieve this consensus. Finally, the author discusses the idea of a U-shaped curve that depicts attitudes over time. This reflects the idea that support is generally high prior to the development, followed by contention during the planning/implementation phase and then returns to its peak after the project is complete.

The first Canadian case study is an analysis conducted by Jegen and Audet (2011) in the province of Quebec. The authors begin by acknowledging that wind energy conflict is derived from three of its characteristics that separate it from traditional energy generation. These characteristics are the small and fragmented nature that causes more siting decisions, the closer proximity to residential areas as a result of the decentralized nature, as well as, the perceived unfairness from subsidies not privy to other sources of generation. The study then looks at a variety of advocacy groups with varying concerns and positions. The conclusion is intriguing in that the authors claim even the opposition groups are not opposed to

wind energy itself. The opposition stems from how the technology is being developed. This is similar to the previous case where procedural issues are the root of public opposition. The opposition is further divided into those who wish to see further efforts to decentralize wind power and spread out smaller generating station rather than concentrate them in wind farms, some take issue with ownership of turbines being private, while others wish to eliminate foreign involvement. Most interesting in this case are those who are opposed to foreign involvement. While this is seen in other cases, Quebec is known to have very hard line nationalist sentiment in their province. Thus, foreign involvement is more significant to a number of populations here than would be found elsewhere. While the authors agree that the main focus of literature has identified three areas of acceptance: environmental concerns, planning and development processes and NIMBYism, they believe a fourth needs to be added- models of wind energy development.

In a case study focusing on communities in Saskatchewan, Richards, Noble and Belcher (2011) identify the most frequently cited barrier as a technological one. Although they found it difficult to decipher what exactly prompted respondents to indicate this, it does appear to be a lack of knowledge of the technology causing skepticism of its widespread adoption. The authors suggest that an incorrect or incomplete understanding can lead to the perpetuation of false claims especially if they coincide with personal biases already in place. The other major barrier that was identified in this province is of a political nature. This comes from a variety of sources, but includes disagreements on how much to invest socially, economically and politically in this technology. Although the authors do not claim this themselves, it does appear that both of these sources of opposition stem from mistrust. This takes the form of a mistrust of the technology itself or the stakeholders involved in its development. This is why the authors believe it is important to engage all the actors in the wind energy policy community in order to avoid competing information and make sure everyone is working from the same set of facts. In light of what we know from other case studies and our understanding of opposition it is

certainly plausible that the main issue here is in fact a confusion and misunderstanding of what wind energy has to offer. People are naturally skeptical of the unknown and this seems to be a critical component in this jurisdiction especially.

The final case study to be discussed looks at social acceptance of wind farms in Australia. This a very comprehensive analysis that includes elements observed in each of the other jurisdictions we have discussed thus far making it the perfect place to conclude. Hall, Ashworth and Devine-Wright (2013) write that opponents of wind development are able to cause contestation based on the weak and insufficient public engagement during the proposal period. They stress the importance of understanding acceptance and opposition as the basis for increasing acceptance of wind technology. Once again the authors observe a gap between high general publicly stated support and local opposition. They find that while people support the reduction of greenhouse gas emissions and acknowledge that this is a benefit to all, they are not prepared to bare the perceived costs on a personal level. To explain this phenomenon, the authors posit four themes of social controversy they observed. The first theme revolves around trust. There is a desire for honesty and transparency in the process alongside regular contact. Specifically, they find that supporters are those who believe that the consultation process was fair and conclude that trust consistently predicts social acceptance and approval. The second theme is distributional justice and the provision of benefits. Of concern here is who benefits and at what cost do these benefits incur. In order to increase acceptability, a local benefit must be demonstrated and incorporated into the development proposal. Another theme is procedural justice, where, once again, there is an emphasis on satisfying the local population through adequate engagement efforts. There is a strong desire by these communities to be the decider of their own fates and be actively involved in determining their future. The final theme identified in this case study is place attachment. As seen in previous examples, there is a strong connection between local communities and their surrounding landscapes. The basic

tenet here is that any visual impact, real or perceived, affects the attitudes of the local population.

Public Opinion in Ontario: Pre-Green Energy Act

Wind generation development began on a noticeable scale in the early 2000s. Hill and Knott (2010) trace the history of the public response to this development, as well as, the actions taken by the Ontario government to appease early opposition with respect to setback policies. To address concerns with noise and health, the Ontario Regulations Governing Health, Safety and Environmental Matters for Wind Turbines were developed. These regulations would establish the setback requirements for turbines from residential homes nearby and be based off of reports from the Ministry of the Environment. The first set of rules was released in July 2004 and was based on the specific site of the proposal. This meant that a noise study was to be conducted by the developer to establish the amount of noise that would be created on that specific site. Upon the completion of the noise study, results must not exceed the limits set forth by the Ontario government. Municipalities also had the ability to enforce their own setbacks under the planning act and, therefore, there was a varying degree of setbacks across the province.

A revision to the rules came in 2008 with the Ministry's release of revisions to the 2004 guidelines (Hill & Knott, 2010). A workshop and comment period were also held and incorporated into the final set of revisions presented in October of 2008. There were no significant changes made to the noise level standards, however, a number of smaller changes were enacted that would make more wind turbines applicable to noise standards. Just prior to the enactment of the GEA, the two sides of the debate, represented on one side by the Canadian Wind Energy Association (CanWEA) and opposed by Wind Concerns Ontario (WCO), made it clear where each side stood. CanWEA believed that the rules as they were, science-based standards set by the government, were appropriate as a basis to move forward. WCO felt that the ministry and CanWEA were not competent to establish setback

and suggested their own changes. The GEA would cause some changes to these setbacks, but this will be discussed in the next section.

The setback issue was the backbone of the growing resistance to wind energy development, but was fuelled by local newspaper reports. Deignan, Harvey and Hoffman-Goetz (2012) analyzed the content of newspapers and their impact on wind development prior to and after the enactment of the GEA. They find that media made health concerns about wind turbines a story through their own coverage. The reason these stories were so powerful were the conflicting opinions, the high exposure and by making them human-interest stories seen through the eyes of the victims. Furthermore, these problems were exacerbated by the fact the people tend to get health-related information from media sources as opposed to more traditional science-based sources. The authors posit that at this time there were several common fright factors that were found in the media and primed to alarm the public. With regards to wind power development they found four main factors and five less common ones.

The first major factor identified by Deignan *et al.* (2012) was dread. This was the most prevalent in the sources they analyzed and was characterized by fear evoking descriptions of the adverse health effects associated with wind turbines and the identification of signs and symptoms. The second factor was the constant assumption that these issues were not yet understood by science and that further studies were needed. More applicable to the post GEA era, but nonetheless relative, the next factor was the stated or implied idea that siting issues were beyond the control of local governments or individuals affected. Another factor, which is linked with the adverse health effects, is the thought that those closest to turbines had a higher health risk meaning there was an inequitable distribution of the consequences. There were also five less common fright factors identified by the authors: identifiable victim, inescapable, contradictory statements, damage to future generations and hidden or irreversible damage. This summary shows not only what the opposition thought was at this time, but also displays how this was being

reinforced by the media who found much success in writing captivating stories regarding these issues, but rarely attempting to gather statements from supporters.

There were also several other perspectives and opposing thoughts emerging at this time. As seen in Bentein (2007), opposition was actually stalling growth in the industry at this time, which was part of the reason the GEA focused on streamlining approval. In this case, the author discusses not only issues of setback and noise related health concerns, but also ice throw and affects on bird migration. Part of the problem at this time was the lack of engagement being conducting by developers in the communities they were working in and a lack of readily available quality information. Likewise, in and around the Ottawa area we see the same pattern. People here were generally in favour of conservation efforts but were skeptical of placing these turbines near homes and agricultural land (Collier, 2007). In this case it seems the concerns were regarding how they would affect quality of life through noise related health effects and visual pollution decreasing property values. Again we see a clear disconnect between developers and the communities causing an information deficit. Almost all of these concerns across the province can be attributed to the exposure to misleading and outdated information, which was causing unnecessary alarm in these communities (Churley, 2009).

Despite many authors deeming this "unnecessary" alarm (Churley, 2009), it was nonetheless prevalent and growing leading up to the GEA. Whereas originally opposition was organized in small community groups fighting a local development, in 2008 a coalition of 22 of these groups formed Wind Concerns Ontario (Hamilton, 2008). Their official position stated that they were against turbines for the following reasons: their industrial nature, they pose a danger to birds and bats, they are noisy, they make people sick, they kill tourism and they decrease property value. Furthermore, they claim that they are not a true source of green energy and have no effect on decreasing greenhouse gases due to their inefficient nature (Hamilton, 2008). This organized opposition was also known to hand out misinformation at community meetings and began to legitimize the opposition position and rally those who oppose wind from across the province.

Public Opinion in Ontario: The Green Energy Act

The enactment of the GEA fuelled the opposition that was already prevalent across the province. As we have discussed before, the GEA streamlined the application process for renewable energy developments and removed municipal control over siting and setback issues. Furthermore, a guaranteed contract of 20-years was offered to suppliers, which would greatly expand the capacity of renewable energy in the province. In a study that looked at support and opposition of wind turbines in Ontario, Baxter, Morzaria and Hirsch (2013) found that opposition towards turbines could be divided into two main frames: health impacts and economic benefits. Furthermore, they found that both of these frames were set against the "meta-frame" of unfair siting. As we have seen previously both in Ontario and other jurisdictions, general support of wind is high and in two separate surveys of Ontarians 87% and 89% of respondents stated support for wind development in their area (Baxter *et al.*, 2013). However, a vocal opposition still existed in Ontario and could even have been said to have expanded with the GEA. This is because the policy does not include a local decision making element, which worked to erode confidence and intensify calls for more locally involved decision making (Baxter *et al.*, 2013).

In the there analysis of fright factors in the media, Deignan *et al.* (2012) find that with the GEA comes an increase in the presence of these factors. This is most evident in the significant increase in the factors discussed before of dread and poorly understood science elements. Opposition is further bolstered by the distinct lack of community involvement that results from the GEA. Warren (2011) states that despite having the right idea, the GEA fails to utilize lessons learned in the German model where an emphasis was placed on community projects and distributed generation resulting in political stability. With more people being directly affected by siting issues and wind generation development, a strong emotional response was also seen. Scientifically speaking it does not appear that there are adverse health affects and decreases in property value are rarely reported,

however, these issues seem to drive opposition. Heintzelman and Tuttle (2012) believe this is because of the emotional impact of wind on these issues, as well as, the endangerment of wildlife. Baxter *et al.* (2013) also believes that it is the perceived affects that have the greatest value as predictors of opposition. These issues are further intensified by the fact that with the utilization of wind, external costs are borne by local residents as opposed to over a greater area as seen with traditional energy sources.

The setback issue discussed in the previous section was also intensified with the new streamlined approval of the GEA. Hill and Knott (2010) believe that with the GEA superseding municipal denial of turbine placement, the setback issue intensified. With the lack of community engagement, a number of factors influence people's positions on this issue including social, political, cultural, technical and economic. They discuss five factors that have lead to the current polarization on this issue. The first is the varying interpretations of global risk and local affects. This has to do with the knowledge deficit we have discussed before. The second factor is how other social issues such as setback and siting issues, as well as, municipal control intensified the noise health risk. Another factor is the ineffective communication and engagement on behalf of the government and developers and the creation of a knowledge vacuum, filled by media and opposition groups. The removal of local actors from decision-making power was another factor and finally a lack of trust in the government as they fail to portray themselves as a neutral actor working towards a solution that satisfies all stakeholders.

Another major issue at this time revolved around the idea of social justice. Krogh (2011) summarizes a number of reports from Ontario and elsewhere that demonstrate a decrease in quality of life in communities where wind turbines have been erected. The injustice comes from the removal of local planning authority and the decreased ability of the public to participate in consultation. Krogh goes as far as to say that the GEA erodes both individual human and environmental rights.

As the failures of the GEA to properly predict public response and to incorporate an adequate community engagement strategy became clear, the government and others began to acknowledge these shortcomings and offer directions for the future. Firstly, as discussed in the review of the FIT program, after the review the rules were changed in an attempt to improve consultation and reduce conflict around siting decisions (Economics Week, 2012b). However, these changes stopped short of restoring the ability of municipalities to deny building permits. An article from April 2012 (Nelson, 2012b) shows us that supporters were readily admitting the shortcomings of the program thus far. It was well known that there was a widespread failure to educate the public of the goals of the FIT program and the GEA, which caused confusion and misunderstanding. Furthermore, the lack of focus on community scale projects was thought to be partly responsible for the high levels of resistance (Hamilton, 2011b). The idea is that the more citizens who have a say in the direction of development and who benefit from this development, the less resistance there will be. These failures and shortcomings are to guide the future of the program, but understanding how to overcome these is a difficult task.

Opposition seems to revolve around the basic idea that people are skeptical of the effects of this new technology being placed in their communities by an outside entity. Quality information is sparse and this gap is filled with media reports and local opposition material. Combining this with the feeling that this is being forced on them and we begin to understand the basis of opposition in Ontario.

The Significance of Public Opinion

Now that we understand the position of supporters and dissenters of renewable energy development, it is useful to think about why any of this matters. Understanding these issues contributes to the whole policy process and eventually to the acceptance of the desired technology (Hall *et al.*, 2013). It can (and has) been demonstrated that in order to have a successful policy the needs of individual communities need to be met (Hill & Knott, 2010) and, to do this, it is necessary to understand their position on these issues. Public opinion and acceptance is a more

critical issue for renewable energy than in traditional sources because of the smaller scale and the diverse number of developers and contract holders. It is something different than what people are used to and that in itself is reason for people to be wary. Furthermore, it can be argued that social sustainability, a critical component of overall sustainability, requires that this development occurs with the support of communities. This section will also show that there are a number of issues Ontario must overcome that directly relate to the issues we have discussed. An understanding of these is a perquisite to overcoming them.

There are several elements of renewable energy development that forge a special relationship with public acceptance not seen with other energy sources. The main difference is the smaller scale that results in an increased number of siting decisions (Wustenhagen *et al.*, 2007). This scale can actually go as small as to pertain to an individual's decision. The result is that renewable energy development depends on active acceptance as opposed to passive acceptance (Sauter & Watson, 2007), whereas, in passive acceptance, the larger population is for the most part a bystander who simply receives the type of electricity their government deems suitable and provides for, active acceptance can require the provision of an installation site, up front capital and behavioural changes (Sauter & Watson, 2007). This leads to three types of acceptance required for successful renewable energy policies. At the broadest-level, socio-political acceptance is required (Wustenhagen *et al.*, 2007). This is broad acceptance coupled with the acceptance by key stakeholders and other policy actors involved in these policies. The second type of acceptance pertains to the acceptance of the technology itself (Sauter & Watson, 2007) or market acceptance (Wustenhagen *et al.*, 2007). This has to do with widespread acceptance by consumers and investors that create the necessary market conditions to allow for this development. The final type of acceptance is the acceptance of the use of this technology at the community or individual level (Wustenhagen *et al.*, 2007; Sauter & Watson, 2007). For an individual this means the willingness and desire to install or invest in this technology and may also refer to any behaviour changes that occur as a result of the installation or investment. At the

community level, this type of acceptance refers to the acceptance of siting decisions and investing in community projects if they are available. All of these aspects of acceptance are almost unique to new technologies and were seen when nuclear power was first introduced.

One of the major goals of the GEA is to create a manufacturing industry for renewable energy technology and to situate Ontario as a leader in this field. To do this the government has aimed to set up a sustainable renewable energy sector that can continue to grow and expand. Social acceptance is the key to social sustainability, which is one third of overall sustainability (Assefa & Frostell, 2007). Social sustainability is the result of a system where there is fairness in distribution and opportunity, as well as, the provision of health, education, gender equity and accountability. Social acceptance in this instance is acceptance of a new technology or development that is driven by the factors of knowledge, perception and fear. The achievement of sustainability thus requires us to understand the publics position on renewable energy and incorporate this in the decision making process. An unwillingness to engage the public on discussions regarding the future of energy in this province negates the overall sustainability of this venture (Assefa & Frostell, 2007).

Australia was once in the same predicament as Ontario is in now. Inadequate community engagement was the number one problem around social conflict in development there (Hindmarsh, 2010). With a shift from an inform community engagement strategy, as we have here, towards an inform-consult-involve strategy, the government saw a significant improvement in overall acceptance (Hindmarsh, 2010). What they found was that communities vary so much between one another that even to achieve something as basic as defining the community you are trying to engage requires you to consult the community itself. It was said that the potential of wind was limited not by technical feasibility, but by local acceptance. Thus, this dramatic shift in approach was absolutely necessary to achieve the goals of the program and a similar shift is now needed in Ontario to achieve our own goals.

In Ontario, social acceptance is a barrier to the implementation of renewable energy that must be overcome with legislation and incentives (Heagle *et al.*, 2011). Community acceptance is based on effectively demonstrating the viability of wind (and other sources of renewable energy), which is based on the following factors: capacity, cost effectiveness, variability, economics, audio-esthetics and health and safety (Heagle *et al.*, 2011). Furthermore, community acceptance is also based on procedural fairness and transparency. Even those who oppose a development will accept the results of a procedure they perceive as fair (Heagle, Naterer & Pope, 2011). Not all of these concerns will be important to every community, nor is this list necessarily comprehensive. The issues around public acceptance of wind generation and renewable energy in general vary across jurisdictions, communities and individuals. This section has demonstrated this variability and started to build an understanding of what the issues around these technologies are and that many of these issues are emotional in nature and driven by the media and local opposition groups. It has also been shown that the provision of knowledge does not necessarily result in support. Therefore, there is something more powerful and more informative that results in the type of opposition we are seeing across the province. The next section will focus on the field of social psychology and its explanation of how these opinions are formed and how their thought processes work.

Section 3: Social Psychology and Marketing

Psychology is the scientific study of behaviour and the individual mind. It is normally conducted at the level of the individual and is most well known for studies that attempt to explain how and why an individual will act given a certain set of conditions. Social psychology looks at how the social environment influences one's personal decisions and rationality. The idea of social marketing is the combination of traditional marketing practices with other schools of thought in order to affect positive behaviour change in a target community. This section will demonstrate the utility of incorporating social psychology theories into the practice of community engagement and communication regarding renewable energy. First, the justification of this type of approach will be discussed followed by an analysis of community-based social marketing and its applications. This will lead to an explanation of the applicable theories from the social psychology literature. Similarly, a number of relevant tendencies have been postulated in this body of literature and will also merit explanation and discussion. Finally, two case studies where psychological theories have been applied in behaviour change studies will be discussed. This section will ultimately demonstrate that social psychology is useful in understanding the underlying factors of acceptance and opposition. It will also demonstrate that a thorough knowledge of these concepts is essential in effective community engagement that results in positive behaviour change.

Individual Behaviour Change and Global Impact

In order to justify the application of this small-scale approach towards correcting a global problem, the following question must be answered: "can individual behaviour change make a global difference?" While social psychology looks at the social context of an individual, it provides insight into the mind of an individual within this context. This necessarily limits the application of social psychology in marketing to targeting individuals or small groups of like-minded

individuals. The question posed previously was addressed by Reynolds (2010) with regards to public health. Her basic argument is that small behavioural changes act as entry-level activities from which people can build on. She goes on to explain that people generally shy away from larger issues and participating in grand-scale solutions, but these entry level changes get them ready for the next steps. This logic can also be readily applied to environmental issues and a number of examples are seen in the literature. For example, many people have had it instilled in them to turn off the water as they brush their teeth. This simple action highlights the importance of water conservation in the individual who is presumably more conscious of this in other aspects of their life. Moreover, one who is already actively thinking about, and participating in, water conservation will be more accepting of further efforts towards this goal such as limiting water use on lawns.

The application of this kind of thought is more suited to a social marketing approach rather than a traditional marketing one. Reynolds (2010) also speaks to this difference, explaining that the goal of traditional marketing is the discovery of the "wants" of a target audience. Social marketing goes beyond this, attempting to determine the beliefs, motivations, behaviours and environment of the target audience. While a traditional marketing approach would result in the creation of goods and/or services to suit the audience, social marketing results in the creation of opportunities that are a direct response of the knowledge gained. In order to successfully determine the type of information necessary to proceed with these interventions it is necessary to incorporate psychological theory and use this literature to fully comprehend motivation and behaviour.

Huijts, Molin and Steg (2012) identified a framework that outlines psychological factors that influence acceptance and opposition of renewable energy technology. Their definition of acceptance is one who exercises active behaviour(s) towards renewable energy technologies. Another type of acceptance they identify is acceptability. This is defined as the exhibition of positive attitudes towards new technologies and accommodative behaviours that arise in response to these technologies being utilized. A more general form of acceptance is support, where

one is supportive of the technology by proclaiming it or pushing for it. Those who show resistance behave in an opposite manner to supporters and protest against the technology and/or refuse to purchase them. Finally, they make a distinction between citizen acceptance and consumer acceptance. Citizen acceptance involves a positive response to the placement of these technologies nearby without any personal involvement. Consumer acceptance is a positive response to the availability of the technology (i.e. purchasing). These definitions comprise a comprehensive working definition of acceptance and opposition moving forward.

With the various dimensions of acceptance and resistance defined, the authors discuss the three main goals that influence behaviour towards new technology and a number of theories that help explain these behaviours. Goals are discussed as the frame through which people select their behavioural responses. They affect what information is made most accessible in one's cognitive state and determine the range of behaviours being considered. The three goals that drive this response are gain, normative and hedonic goals. When one focuses on a gain goal they will base their behavioural choice on the option that yields the highest gain with the lowest cost and/or risk. Normatively minded individuals, however, will base their choice on a moral evaluation of the various options. Finally, those who are hedonic-minded will decide based on what feels best.

These three goals can further be understood by a number of psychological theories that support the pathways of each method of behavioural decision making. For example, gain is represented by the theory of planned behaviour while normative goal is understood from the perspective of norm activation theory. The hedonic behavioural pathway is covered by many different theories of affect. All of these and more will be discussed in detail in the following section, but first Huijts *et al.* (2012) also wrote about other frameworks which impact behaviour towards technology. Since in many cases knowledge of these technologies on the individual level is limited, acceptance can be strongly influenced by trust in the actors and the perceived fairness of the associated decision making process. Here the authors describe trust as a psychological state that involves the acceptance of vulnerability

based on the expectation of the positive intentions or behaviours of others. Perceived fairness is related to not only the decision making process, but also the distribution of costs, risks and benefits. Both trust and procedural fairness influence one another and create a framework with which one can attempt to understand acceptance. These authors lay a foundation from which to build using psychological theories to understand the motivation and resultant behaviour of individuals towards renewable energy technology. While they identify three main goals that apply, a number of perspectives will be demonstrated in the following section. Each of these has its own merits and aids in building an overall understanding of the complexity of human behaviours and the individual response to renewable energy technology.

Community-Based Social Marketing: An Overview

Community-based social marketing (CBSM) was developed by social psychologist Douglas McKenzie-Mohr as a means to develop a widely applicable framework for targeting positive behaviour change and fostering this change at the community and individual scale. Tabanico and Schultz (2007) write that CBSM was developed in response to the inefficient methods most commonly used for behaviour change interventions- education campaigns and awareness campaigns. These campaigns were and continue to be utilized on the assumption that a deficiency in a specific behaviour is resultant from a lack of knowledge. While in some cases this is certainly a valid barrier, it is a simplistic view that ignores the motivations of behaviours. Awareness campaigns are used to highlight the incidence rate of serious problems in an effort to highlight their severity. The issue with these campaigns is that people tend to shift their behaviour towards the social norm, so highlighting the high incidence of a negative behaviour can cause the problems to intensify (Tabanico & Schultz, 2007). CBSM takes the standard goals of traditional advertising- changing consumers' preferences, not behaviours- and delves into the behaviour spectrum (McKenzie-Mohr, 2000). This includes the addition of the goals of social marketing, which emphasize the fact that program design should be based

on an understanding of the barriers to behaviour change and should target a specific segment of the population. McKenzie-Mohr (2000) describes CBSM as the merging of these ideas from social marketing with knowledge from psychology. CBSM includes four steps to design and implement an effective behaviour change campaign.

The first step is to identify and select the behaviour you will attempt to change. It is important to be as specific as possible (Tabanico & Schultz, 2007) when selecting a target behaviour, as well as to balance three components identified by McKenzie-Mohr (2000): potential impact, barriers to change and resources available to overcome these barriers. Barrier identification in itself can be a rather intensive process and must be based on the demographics and other population characteristics, context of the behaviour within that community and the behaviour itself (Tabanico & Schultz, 2007). In order to identify barriers it may be necessary to conduct studies using focus groups and surveys or literature reviews, customer feedback analysis and studying existing technical reports (Tabanico & Schultz, 2007).

The second step is designing the strategies to overcome the barriers identified in the previous step. McKenzie-Mohr (2000) describes this step as the systematic removal of the identified barriers. A number of strategies can be employed at this point and many will be suggested in Section 4, but there are several main ones that will be mentioned here. The first technique is the use of commitment strategies (McKenzie-Mohr, 2000). Commitment strategies involve any attempts to make someone physically commit to the behaviour change and can include the signing of a contract and/or consistent follow-up to ensure they are upholding their commitment among other things. Another similar, but more common technique is to incentivize the behaviour change and reward their efforts. Another approach is to use injunctive and descriptive norms to cause behaviour change (McKenzie-Mohr, 2000). Injunctive norms involve one's perception of what is socially acceptable or unacceptable. People tend to change their behaviour to those that are perceived as acceptable and, therefore highlighting this can cause a

change. Similarly, descriptive norms involve one identifying with and aligning themselves with the observed behaviours of those around them. This is also a facet of the idea of social proof; a theory that stipulates that people use other's actions as a guide for their own (Tabanico & Schultz, 2007). Another type of behaviour change tool is the use of reciprocity. The idea behind this is that individuals have the tendency to repay what another provides and will often agree to a larger request after being given something small (Tabanico & Schultz, 2007). This is the idea behind organizations that send out "free" calendars or return address labels alongside a solicitation request. Many more examples exist and it is inconceivable to think of writing out a comprehensive list, however, other techniques will be discussed in Section 4.

The third step in the CBSM framework is piloting (Tabanico & Schultz, 2007; McKenzie-Mohr, 2000). Now that one has decided on the behaviour they wish to change and the tools they will use, a test is to be conducted on a sub-population from the larger target area. This is to be repeated, reworked and retested until the desired effect is achieved before it is to be done on a larger scale. Once an appropriate program has been successfully tested and implemented on the full-scale, the fourth step is evaluation (Tabanico & Schultz, 2007; McKenzie-Mohr, 2000). The general goal of this step is to assess the impact of your intervention and add to the growing body of literature of similar programs. McKenzie-Mohr (2000) believes that it is important not to rely on self-reporting as a means to assess behaviour change. Instead he suggests that direct measurement be used in a manner more akin to the natural science world. It is important to consider how you will assess the impact in the overall design of the intervention.

This final step, often overlooked in traditional behaviour change strategies, is one of the main advantages of using the CBSM framework to encourage behaviour change (Tabanico & Schultz, 2007). Another unique and important feature is the piloting step. This step is critical in saving both time and resources by making sure you are ready to implement your program on a large scale before committing to its use. The fact that decisions involved in all facets of CBSM are based on empirical

data, whether you have to collect this yourself or not, is also relatively unique and a major benefit of this framework. Finally, the idea of focusing on behaviour is both the crux of CBSM and its main advantage. Each step involves keeping the overall goal of behaviour change and behavioural barriers in mind and executing the strategies that will cause the most impact along this dimension. This is what sets CBSM apart from other methods and why it should be considered and understood in order to understand the human response to renewable energy technology on the individual and community scale.

Other Applicable Social Psychology Theories

Research on the relationship between our cognitive understanding and its affect on purchase choices and behavioural responses to products has been undertaken in earnest since the 1980s (Erevelles, 1998). Erevelles (1998) describes the rise of this type of research despite a lack of cognitive models that adequately explain the behaviour of consumers. However, the research conducted in this time period laid the foundation for the large body of literature that now exists and that will be discussed here. Thus, it is important to look at Erevelles study on affect and marketing as a starting point for the more insightful research that would follow.

Affect is described by Erevelles (1998) as a valence feeling state, which he likens to a mood or emotion. This is distinctly difference from ones attitude, which is an evaluative judgment and was/is often held as the standard for explaining consumer preference. In this article, however, Erevelles argues that it is in fact affect that is the primary motivator of consumer behaviour and is better suited as a focal point for marketing campaigns. With the pathways of decision-making not thoroughly understood in the way they are today, authors at this time speculated on the role of affect in product selection. For example, many authors were under the impression that consumers would choose the product that produced the most positive affect upon inspection. This affect could be from the packaging, previous experience with the product and/or the product's name. Alternatively, negative affect was also thought to influence decision-making. Theories such as the

protection motivation model describe behaviours that result in response to feeling in danger. This is seen often in political campaigns, particularly in the United States, where one party alleges that if the other is elected the consequences will be x, y and z, all of which should elicit fear. This is also commonly seen in anti-wind turbine literature, such as those discussed in previous sections. The discourses related to fearing outsiders controlling the decisions locally and the ideas of NIMBYISM are directly related to this type of thought. Ervelles (1998) concludes that there is a lot of research to be done in the role of affect in marketing and as we will see, many new theories have emerged and been applied to this type of marketing thought. There is now a greater understanding of the behaviours exhibited by consumers and the broader population in response to new technology and specifically renewable energy technology. This knowledge is represented by a number of theories, as well as well-documented behavioural tendencies and other emotional and psychology states.

Prospect Theory

In "The Political Mind," Lakoff (2009) provides an in-depth analysis on how the human mind affects are beliefs and behaviours, especially in politically guided decisions. At the foundation of this is the Prospect Theory described by Kahneman and Tversky. The prospect theory claims that people make decisions in a much different manner than described in classical economic rationality and rational thought more generally. Instead they find that people act in a number of ways that seem counterintuitive, but are observable and explainable by psychological phenomena. The first of these is that people tend to think in gains and losses relative to an arbitrarily determined reference point. This is partly due to the second part of this theory, which details that people evaluate choices with frames that highlight gains rather than losses. Much of this (if not all) occurs on a subconscious level and one is not aware of the frames applied to a given situation. Therefore, although one is thinking in terms of finding the highest gain and least loss, as classic thinking would dictate, this is done through a frame of which we have little knowledge or

control over. Along similar lines, there is also a preference of avoiding losses that is stronger than the preference for gains. This means that in certain scenarios the typical person will choose the less logical decision based on the fact that it contains no loss rather than a rational choice that includes a very strong gain and a negligible loss.

In the same way, people also prefer certainty to uncertainty, even if it makes more logical sense to take on the uncertainty because of the chance of a greater gain. People also think in terms of prototypical frames. That is to say that each decision made is made within the most accessible frame to the individual at that time. When the frame changes, a new state is adapted to and a new reference point is set, which forms the basis for further behaviour. It is important to note that it is the most accessible frame that is more often used and that typically we substitute this frame in favour of a more accurate, but less accessible one.

The Theory of Planned Behaviour

The theory of planned behaviour postulates the process through which the proper behavioural response is chosen and executed (Ajzen, 1991). This theory holds that an individual's intention to perform a behaviour is the central factor in that decision. Furthermore, the stronger the intention the more likely the individual will carry out the behaviour. The caveat to this, Ajzen explains, is that most behaviours will also require what he calls "actual control" over the behaviour in order to ensure its execution. Here actual control refers to non-motivational factors such as physical opportunity and resources (time, money, etc.). This leads to a theory that includes three major factors that form one's intention and eventually result in action or inaction: attitude towards the behaviour, subjective norm and perceived behavioural control. Each of these factors not only adds up to form the intention, but also impact one another prior to the forming of the intention. Ajzen defines the attitude towards the behaviour as how the behaviour is viewed in terms of favourability. The subjective norm is defined as the social pressure on the individual to either perform the action or remain idle. Finally, perceived behavioural

control is a tool of past experience and the anticipated barriers to the behaviour and the information this tells one about the relative ease or difficulty of completing the behaviour. This is also a function of one's confidence in their ability.

Ajzen also postulates that crucial to each of these factors is a series of beliefs and other salient information related to the behaviour. Behavioural beliefs affect one's attitude towards the behaviour. They are based on a subjective value applied to the expected outcome of the behaviour that is based on previous associations that have been made with the behaviour in question. Normative beliefs are those that that result in the impact of the subjective norm on one's intentions and behaviours. This is how strongly one feels the social pressure favours one outcome over another combined with one's motivation to comply with the norm. Therefore, this aspect of decision-making will have less of an affect on those who internally dissociate from the norm. Beliefs regarding control ultimately affect the strength of the intention and potential resultant action. Ajzen states that not only do past experiences impact one's control beliefs, but also those of the individuals peer group. These experiences allow a person to theorize the potential barriers they will face and whether or not they have sufficient resources to overcome these. The final component of Ajzen's theory is the addition of a moral norm as a factor of intention when dealing with ethically challenging decisions. The question of whether or not to adopt renewable energy technology and/or support it can be framed in an ethical manner and this should be considered part of this theory when applying it to these behaviours.

Although the Theory of Planed Behaviour is an older theory it does carry utility when thinking about understanding behaviour and attempting to affect behaviour change. Perhaps one of the most important revelations of the theory is that predetermined beliefs impact the likelihood of present behaviours. This highlights the importance of understanding the communities you are working with and of catering communications to specific communities who have shared experiences. Ideas like this are the reason mass communication campaigns are ineffective. People do not have the same experiences and each person and community will interpret information differently based on both their shared and

personal experiences. In CBSM this is one of the main tenets and the reason it calls for the identification of the barriers specific to your target population and why it stresses the importance of being as specific as possible with the target behaviour and community.

Relational Framing Theory

The relational framing theory proposes that in any communication interaction two frames are evoked: dominance-submission and/or affiliation-disaffiliation (Henningsen *et al*. 2003). The former refers to how the communicator envisions the role of influence, power and control to guide the interaction. The latter describes the communicator's expectation of liking, affection and positive regard to frame the communication. A personal involvement in the communication and its potential outcome is thought to intensify the effect of both frames and in particular the dominance and affiliation aspects of the different frames (Henningsen *et al.* 2003). Henningsen *et al*. (2003) look at the application of relational framing theory to predicting the type of interaction that will occur when each of the frames is made salient. They found that a dominant framed communication would result in a high amount of normative influence. Normative influence decreases group accuracy, increases decision time and results in low individual support for the group decision. This is a result of the individual desire to maintain harmony within the group and be viewed positively by group members. The goal of group interactions like this should be to produce a high quality decision and one way to do this is to encourage informational influence as opposed to normative. This makes it important to consider the frame you are presenting a communication through to a community since it will then be discussed whether formally or informally. Being aware of which frame will be salient can allow you to control the quality of debate and ultimately the decision and feeling of the community you are working with.

Self-Determination Theory and Message Tailoring/Framing

In 2008, Pelletier and Sharp proposed pairing message tailoring with the ideas from self-determination theory to improve proenvironmental communication. Self-determination theory (Deci and Ryan, 2000) theorizes that the context either promotes or hinders the internalization of motivation and behaviour. The internalizing of these things is said to be critical to making changes to behaviour permanent as opposed to the fleeting change seen in traditional information and awareness campaigns. The idea of self-determination theory is that people are either intrinsically or extrinsically motivated in their behaviours. Extrinsic motivations come from outside sources, for example a monetary or other reward for the behaviour. Generally, this type of motivation would not produce the long-term maintenance of the behaviour in the absence of the external reward. Intrinsic motivation occurs when a person internalizes the behaviour and the performance of said behaviour becomes part of one's identity. Persons who are intrinsically motivated are said to have high levels of self-determined motivation that results in the long-term maintenance of the behaviour, the performance of more difficult behaviours and diversification into related behaviours (Pelletier & Sharp, 2008). The advantages of achieving intrinsically motivated behaviours over extrinsic are quite clear and Pelletier and Sharp see message tailoring as a means to do this and create impactful behaviour change.

Pelletier and Sharp (2008) posit that effective communication requires a message that will be processed in a way that optimizes its impact on how people think about it. They theorize that messages should be tailored to cater to the phase of change the person is in, in order to move them to the next stage and eventually a newly intrinsically motivated behaviour or viewpoint. The first phase of change is the detection phase. This is the phase where a person must be made aware of the problem and the need to make a change. Some effective ways of doing this have already been discussed with reference to the prospect theory. Fear is a highly

motivating factor that can be utilized to raise awareness. It is also important to recognize that aversion of costs is more motivating than the appeal of benefits.

The next phase one enters is the decision phase. Now that they have been made aware of the problem they will be looking for a way to deal with the negative emotional response to this new information. Therefore, people in this phase are more likely to respond to messaging about feasibility of options and how these options address the issue at hand. In essence, they have gone from a place of comfort, were made uncomfortable and are now seeking means to reestablish the equilibrium. Finally, one will enter the implementation phase. In this phase they have selected the behaviour they will perform and are looking for specifics on how to do this and the situational context they will require. Here the message is simple; how can they implement the behaviour. It is important to be as specific and concrete as possible when explaining this.

Finally, Pelletier and Sharp suggest combining these ideas and tailoring messages also based on characteristics of the individual. While it can be difficult to ascertain what intrinsically motivates people, this knowledge is invaluable and will allow you to make meaningful and sustainable changes. While the example used focused on a monetary reward as an extrinsic motivator (as it often is considered), there are some individuals who internalize financial incentives. If one can uncover this as a pervasive motivating factor in population one can further tailor a message to more effectively engage that community. The same holds for any commonly held intrinsic motivator and this is why it becomes so important to take the time to not only select a specific target population, but also understand them.

Elaboration Likelihood Model of Persuasion

The elaboration likelihood model of persuasion was discussed alongside relational framing theory as tools to understand social influence by Henningsen *et al.* (2003). The theory states that there are two routes to persuasion: the central route and the peripheral route. A person who intakes information via the central

route submits this information to cognitive scrutiny, while information processed via the peripheral route does not get subjected to the same scrutiny. This is similar to Lakoff's use of system 1 and system 2 processing, which operates the same way as the central and peripheral routes. Lakoff suggests that when system 2 is at work (the peripheral route) people are less likely to question what they are being told and are vulnerable to oversimplifications and other common psychological errors that will be discussed later in this section.

Instead of cognitive scrutiny, the peripheral route relies upon the persuasive environment (e.g. a fancy office), perceived credibility of source and mood among other things. This is more likely to be the main processing criteria if the person is unmotivated or not capable of processing the message. Although Henningsen *et al*. found no significant correlation between high motivation and involvement and use of the central route of processing. The authors point out that other researchers have found correlations between the informational influence and the central route of processing, as well as, normative influence and the peripheral processing route. They were surprised to find that in their experiment, highly involved groups were quite willing to rely on normative influences, which was an unexpected result.

In one's efforts within a community there will naturally be both those who are motivated and those who are not. Therefore, some community members will be critical of the content of your messaging (central processing) and those who evaluate you based on other criteria (peripheral processing). This leaves some of the target audience vulnerable to the number of psychological simplifications discussed in this paper. It is important to consider the difference between these two types of person and be willing to take the time and create a vested interest for everyone and an environment where the outcome matters to all.

Social Trust and Justice

While there is no specific theory documenting the affects of trust and justice on community engagement strategies or behaviour change programs, these

concepts have been researched and applied to these tasks by several authors. Trust has already been discussed as a factor that affects the outcome of peripheral processing (Henningsen *et al.* 2003), as well as, a frequently stated issue between renewable energy developers and the communities, as seen in Section 2. Siegrist and Cvetkovich (2000) studied the effect of social trust on a community's perceptions of the risk of a government waste management project. This example serves as a good predictor of the type of role trust can play in government policy implementation, including renewable energy development. In both the waste management example and the scenario being discussed in this paper, trust plays an important role in the evaluation of proposals due to a general lack of knowledge about the risks, benefits and acceptability of unfamiliar technologies. In the absence of this knowledge and especially a lack of motivation to learn about them, social trust guides decision-making in order to reduce the complexity of these choices. The authors find that evidence suggests those that perceive a higher number of benefits also perceive a lower risk regardless of the actual risk. Trust is found to influence both perceived benefits and risks because people will seek out information from sources they perceive as trusting. It was also found that when knowledge is sufficient, individuals will make their own assessment and trust will not be a factor. Trust is the mitigating factor of the correlation between high perceived benefits and lower risk. If trust is controlled for this is no longer a significant correlation. This idea, like many others discussed, highlights the need to have a relationship with the community you are working with. Not only is it important that they trust you, but it is important to treat those who are trusting and those who are not differently. Different styles of communication are necessary to have a meaningful dialogue with each of these groups of individuals.

The concept of justice is similar to trust in that it is a subjective valuation of the communication, communicator and the related information. Hillman (2004) provides a case study for understanding how justice can be important in the facilitation of an environmental intervention. In this case Hillman writes about the role of environmental justice in the case of a stream rehabilitation project. He

defines environmental justice as fairness in the biophysical dimension specific to a particular socio-political context. This can further be broken down into three subcategories of justice: distributive, procedural and relational. Distributive justice relates to the outcomes of decision-making and questions such as: who gets what? Who pays for what? And based on what criteria? Procedural justice covers the institutional processes involved in the decision-making process and includes who has the opportunity to influence the decision and have a say in the process. Finally, relational justice refers to the power relationships between the community, outside stakeholders and the broader population.

Considering these factors in ones approach to decisions that impact a community is in stark contrast to the traditional top-down panning process we are more accustomed to. In fact, it is this process that the ideas of environmental justice were created to combat. It is strongly related to a sense of fairness, which was something consistently written about in Section 2 regarding reasons people oppose renewable energy developments in their communities. Hillman (2004) concludes that applying these ideas to stream rehabilitation results in three key principles of justice. The first is the actual addressing of the issue, which in this case is the environmental degradation. This will also include ascribing causality to the problems and whether or not this should result in any further action. The second principle is addressing the differences in both the biophysical and social spectrums. Hillman states that dealing fairly with differences can be considered the key to justice. The final principle involves reconciling the different priorities that stem from the aforementioned biophysical and social differences. Justice revolves around equality and inclusiveness, therefore it is critical to listen and respond to all of the stakeholders irrespective of their personal resources or position. The idea of justice is important to consider because it also speaks to the incorporation of differences and suggests that the willingness to include all voices is critical. This has become a common theme with the theories we have discussed and will continue to be represented as a key component to successful community engagement.

Psychological Tendencies

There are certain individual tendencies that have been described by social psychologists and researchers from other social sciences that are useful in understanding how information is likely to be interpreted by a community. Six of these will be discussed here and most will relate to one of the theories described above. Each of the tendencies to be discussed will be accompanied by a tangible example of how this information is useful when thinking about community engagement and understanding behavioural responses to renewable energy technology.

The first psychological tendency is known as optimism bias. Lakoff (2009) discusses optimism bias in the context of the prospect theory. The idea of an optimism bias is fairly straightforward; people have a tendency to be overly optimistic in their assessment of a given situation and are also likely to believe an overly optimistic assessment from an outside source. This becomes important in discussions related to climate change and the need for changes because people will be wrongly optimistic that this issue will have a positive outcome with the continuation of the status quo. This will decrease their inherent desire to change in order to achieve a goal they believe will be met without any sacrifice. Also in his discussion of the prospect theory, Lakoff speaks to the fundamental attribution error. The fundamental attribution error states that a person is likely to overemphasize personality based assessments versus situational factors in their evaluation of other people's behaviour, but the reverse holds true for the assessment of personal incidents. This leads people to lay blame on personal attributes of community leaders or other people in positions of power who have been perceived to fail. In reality, many of these cases of failure would have been the result of situational factors beyond the control of the individual. This is important to consider when communicating causation of previous failure and in selecting the appropriate person to spearhead community engagement efforts.

Lakoff continues his explanation of behaviour that contradicts the rational economic theory with a discussion of reactive devaluation and the salient exemplar. The idea of reactive devaluation is that people perceive a proposal as less valuable if the other side offers it. Experiments have shown that people will consistently rank the same proposals lower if it perceived to come from the opposing viewpoint or side. This speaks to the importance of remaining an impartial party when executing a communication program. If possible, it is even more favourable to portray oneself as a partner of the community, which will make it more likely for proposals to be evaluated fairly and/or positively by the community. The salient exemplar notes that citing a well-known example of a rare occurrence tends to make people think it is a common occurrence. Opponents of renewable energy can utilize this as a tool of propaganda and it is important to recognize when this is at play and address it. Opponents could cite very rare technical failures of these technologies and over time, repetition will make these incidents appear common. In Toronto, for example, many people cite the failure of the wind turbine installed on the Exhibition grounds as grounds for dismissing the use of this technology all together. There were many reasons for the failure of this project, but it does not bring the technical reliability of all wind turbines into question.

The final tendency to be discussed is risk aversion and the related topic of risk communication. Risk aversion, as was discussed alongside the prospect theory, is the tendency to avoid certain loss over the potential of a greater loss. This makes it difficult for individuals to see the benefit of cutting one's losses and abandoning a project (a certain loss) over continuing because there is a small chance of success (potential greater loss). In the discussion of risks associated with developments the idea of risk communication has emerged to describe the exchange of information between experts and non-experts regarding risks (Arvai, 2007). Arvai (2007) posits that apart from poor quality of information, there are two areas of this process that influence the quality of risk communication. The first is whether or not the process directly or indirectly causes the audience to rely on simplifying heuristics that result

in systematic biases. The second is how the information is presented and how the varying ways of interpretation are considered.

The first process relates to the tendencies discussed above. People often rely on intuitive heuristic principles that reduce the complexity of judgments. One other way people do this is through the representative heuristic. Here people will make a judgment based on its correspondence with other similar scenarios or preconceived ideas of those scenarios. This leads to another way people rely upon heuristics, which are preconceived notions of where the information being received is coming from. Finally, information can also be interpreted through an affect heuristic, where an innate emotional state is experienced or a smaller part of that stimulus, which alters the way one perceives the information either positively or negatively depending on the type of affect elicited by the communication.

The second process revolves around the different ways information can be presented and how this affects its interpretation. One example of this provided by Arvai (2007) is the idea of utilizing a participatory decision making process. He argues that information presented in this manner will be better received than standard methods. Furthermore, Arvai lists a number of issues that need to be addressed during the process in order to produce high quality decisions. The first is to identify and address the potential sources of biases from the heuristics discussed earlier. The second is to temper the affect associated with certain stimuli with the utilization of technical analyses. Finally, Arvai argues that it is necessary to put aside simplifications and not overuse comparisons that may lead to certain preconceived responses. This leads to a series of tools that can be used to structure the conversation in a manner that adheres to these principles. This involves clearly defining the decision being made and the risks it presents, identifying and understanding the options and discussing the trade-offs of each choice. Moreover, it is necessary to help people focus on values as they are expressed through the objectives of the project. The key is to have the community evaluate the current proposal independent of outside influence. Arvai finds that this process leads to

higher levels of trust, comfort with the decision, and higher satisfaction with the objectives and concerns.

Examples of Applying Social Psychological Thought

Rose and Dade (2007) have developed a psychographic system capable of mapping out the values that underlie behaviour. Using this system they identify three groups of people to consider for targeting behaviour change in a similar manner to the three phases of behaviour change identified by Pelletier and Sharp (2008). The first group who share a collection of values related to behaviour change is called the pioneers. Pioneers lead the way to new things acting as society's scouts. They continually question the status quo and are attracted to what interests them. A large percentage of them will be highly ethical and most will have a global outlook. This group is the most comfortable with change. The second group identified by Rose and Dade is the prospectors. The prospectors follow the lead of the pioneers driven by their desire to acquire and display symbols of success. They tend to have high levels of energy and seek adventure and fun. They avoid social risk, which is the main separating characteristic between themselves and the pioneers and what prevents them from innovating. The final group who shares similar behaviour change values is the settlers. These are individuals who follow the lead of the prospectors, are socially conservative and concerned with their local surroundings. They prefer the known and are more receiving to channels they perceive as trustworthy. Furthermore, they are wary of change, crave discipline, keep to the rules and are seeking a lead from an authoritative voice.

Rose and Dade propose that by identifying these types of groups one is able to better affect desired behaviour change. They state that one adopts views to explain their behaviours and that these are explainable through a number of reasons. However, the most important factor is one's values- these are the defining underlying factors in explaining behaviour. Therefore, to influence behaviour and engage communities we must understand people and the values they hold. For example, those categorized as prospectors are often overlooked, but Rose and Dade

argue that they are in fact essential for behaviour change. As a group they dislike being told they are wrong and giving up things they currently have. They fear stirring up any kind of social controversy and will stay near the social norm. In order to reach this type of population they need to be given simple options where they are rewarded for doing things better, getting the right things or having the right experiences. It is important to stress that a reward be given as opposed to them giving something up- a physical gain is key.

Based on their psychographic mapping of values, Rose and Dade suggest a number of tools to use to influence the behaviour of populations. The first of these tools is called the locomotive. The idea is to start with the pioneers and build momentum by encouraging the uptake of this change by the prospectors. To do this, one must build what Rose and Dade call a "success bridge." This can take the form of a high-profile endorsement, the backing of a well-known company or brand or a reward. The point is to give the prospectors a reason to think it is socially beneficial to follow the lead of the pioneers. One other tool is to match motivations by values. Each of the groups discussed have certain qualities that appeal to them than other groups. To be successful, after identifying these groups, it is important to cater the message in a way that emphasizes the quality that speaks most to the values of that particular group.

Another interesting application of social psychology in communication efforts is niche-based approaches to sustainable development as seen in *Sustainability and Reflexive Governance* (Smith, 2006). Strategic Niche Management (SNM) is a tool used to foster acceptance of new technologies. It relies upon the creation of 'socio-technical' niches and the promotion of social learning through participatory and iterative experimentation. The goal of this approach is the changing of consumption patterns and other behaviours that affect the success of new and innovative technologies being released for public markets. This transformation is made possible by the model of change presented by Smith (2006). One of the main features of SNM is social learning and there are two important

lessons one must gain through this technique: lessons internal to the niche and lessons external to the niche.

Areas of interest that are internal to the niche include learning about the social desirability of the various options. To do this one must ascertain technical and economical feasibility, as well as, the gains to the environment that result from the adoption of the technology. The next lessons considered internal to the niche revolve around the stimulation of further development of the technology. This includes increasing the cost efficiency of mass production and the promotion of complementary products and skills. It also includes fostering other changes in social structures that might be necessary for more widespread diffusion of the technology.

The lessons external to the niche look at factors on the scale of institutional reforms that may help with the uptake of a new technology. As such, it is necessary at this time to communicate what changes in the institutional framework will be necessary for the market success of the new product. Along the same lines, it is also important to build interconnectivity between important stakeholders. This will involve building a constituency made up of the corporate sector, researchers and government bodies that will be able to affect the necessary institutional changes required for the uptake of the product.

One example of the success of this model is seen with the rise of the Danish wind energy movement. While wind power began with a small number of activists experimenting with this technology, a number of social movements built up around their use and this momentum was propelled forward by necessary institutional changes that resulted in a highly lucrative and successful wind energy industry (Smith, 2006). While policy-makers at the time were largely unaware they were following the path of SNM, analyses done in hindsight show that this type of thought was responsible for the success that was achieved. For example, the policies highlight the importance of recognizing changing ideas and creating niche policies to support these. It also shows how important it is to learn about the needs of the industry and respond to this with the creation of new groups of stakeholders and

changing the institutional framework to match this. Finally, it shows the advantage of capitalizing on socio-technical change and creating flexible policies aimed at pushing this change in a socially beneficial direction, as well as, the capitalization of policy windows (see: Kemp et al., 2001 for a full case study).

The explanation for decisions and the interpretation of incoming information is not intuitive and is dependent on a large number of factors. In order to facilitate the transition to a distributed renewable energy system it is critical to understand these factors and how they affect the communication of important information. It is also important to develop a relationship with the communities one is working with in order to understand them, their needs and wants, as well as, to establish oneself as a trusted source of information. Furthermore, the pinnacle of success would be to not only change the energy system, but to create sustained change in how the communities view renewable energy and the importance of taking steps towards creating a cleaner and pro-environmental lifestyle.

Section 4: Community Engagement and Renewable Energy

The type of community engagement necessary to achieve local support and sustained change is not practiced in Ontario. This final section will analyze how current consulting is conducted and the types of responses that are typically given. This information will then be critiqued though a social psychology lens. Finally the basic tenets of a framework for effective community engagement will be outlined to guide future consultation efforts.

Analyzing Public Consultations in Ontario

In order to be successful in efforts to engage communities regarding renewable energy development, there must be an attempt to move passed the idea that the goal is simply informing communities of a plan and its consequences. Instead, there must be a focus on working with the communities to achieve an outcome that is beneficial and satisfactory for all stakeholders. Moreover, there must also be an understanding that community engagement is not simply about sharing expert knowledge on the issues and that doing so is not going to change the perspective of those who oppose renewable energy development. Lakoff discusses the problem of applying universal reason to an issue that is deeper than knowledge, and includes emotional and experiential issues as well. He states that looking at communication through the lens that everyone has one rational mode of thought means that one limits themselves to three explanations: they are mistaken or in need of facts, their reasoning is incorrect or there are moral issues. The past two sections demonstrate that, while these are certainly factors in people's feelings toward renewable energy, it is naïve to assume that opposition could be so easily categorized. Each community and each individual has a unique opinion that requires inserting oneself into the community in order to understand and ultimately address these opinions.

Another common occurrence that must be avoided is the idea of using fear as a means to get one's message across. This has been used in many of the opposition efforts towards renewable energy and it seems to be ubiquitous in political campaigns. However, that is not what will frame the recommendations of this section. While it may seem obvious that pointing out the catastrophic effects of climate change and the urgent need to avoid these would inspire cooperation, Lakoff suggests using a different emotion- empathy. Lakoff believes this is the most powerful tool one can use to rally others to a cause, but requires one to have an honest and truthful conversation. In other words, this requires you to frame community engagement efforts in an honest matter where truth, trust and justice are the focal points. Moreover, Lakoff continues, empathy is what allows us to understand our connection with one another and with the natural world. This adds to the idea of building up a community and working within it to inspire togetherness as a means of promoting the acceptance of renewable energy development.

Specific Examples of Public Consultation Interactions

This section will highlight the interactions that occurred during consultations for two different wind energy projects. Looking at these specific examples will help to better understand the shortcomings of the current approach and how social psychology can be used to bolster these communications. The first example to be discussed will focus on public emails for a project proposed in Port Ryerse, Ontario. The company behind the project was awarded a FIT contract (assuming the completion of consultation, environmental assessment, etc.) on February 25, 2011 for a project that includes four turbines. A report released March 2013[1] as part of the conditions of the FIT contract, highlights the interactions between the developer and the surrounding community.

The emails received from the community highlight many, if not all, of the

[1] Port Ryerse Wind Power Project Consultation Report (2013) http://www.boralex.com/medias/sites/pdf/details/port-ryerse/PRWPP-Consultation-Report-Public-Agency-and-Municipal-Consultation.pdf

issues that were highlighted in Section 2. For example, one concerned citizen wrote that "money trumps morality," highlighting his belief that this company is here to make a profit at the expense of the local community. Furthermore, he wrote that the rights of locals was being violated and they were being made to accept their fate with no say in the issue of these turbines. The only response the developer was able to give was that a public open house would be held to address community concerns. Likewise, another resident wrote to highlight her feelings that this development has "taken away the voice of the people." She also writes that not all those that oppose this development are against green energy development; it is this specific project in this location that they oppose and the manner in which it is being conducted. The response from the developer was to indicate "…that UDI is committed to engaging community participation with the goal of producing clean, reliable, and renewable power for generations to come" and then directing the community member to the website for more information. One final example of an email correspondence is a concerned citizen who wrote that he would offer his property to hold a meeting to allow the developer to prove that they are committed to what they promised in the previous example (a line they fed to a number of email respondents). This citizen showed a desire to have the developer and community come together for a conversation, but his request was met with the developer highlighting what they are required to do by law and not offering to go any further than that. This was also a common response to emails: the developer would explain what they are required to do by the Ontario government and explain that this is exactly what they were doing. This was meant to show that they were playing by the rules and doing what the government instructed.

A comment submitted on February 12, 2013 expressed concern over the impact on the views from the cliff and scenic roadway in the area to be developed. Again the community member was directed to the rules outlined by the government and the heritage site assessments conducted in the area. The developer also stated "…the cliff and the lakeshore are not of Cultural Heritage Value or Interest (CHVI). There is a distinction to be made between things that are scenic and beautiful, and

things that warrant designation and protection under the Ontario Heritage Act." Clearly, the community member(s) assign some value to this area, but this is not reflected in official documents and, therefore, is not a concern for the developer or the government. Another comment made in this month concerned the distribution of benefits versus costs. The email inquired how the project would benefit the community as claimed in the report and also stressed that it is his view that the only people it benefits in the community are the landowners being paid for the lease. While the developer did provide a longer than average answer in an attempt to explain the benefits, the respondent was not satisfied. He continued his correspondence by adding that the benefits stated in the developer response are for the larger region, but seem to pass over the immediate neighbours and townspeople. One final example is an email submitted on March 6, 2013. The comment is pretty standard and reveals concerns about the land equity of surrounding lots, as well as, the detrimental impacts of sound produced by the turbines. The response, however, is as follows: "…with credible information as a guide, the correspondent might come to better accept the Project..." This is a clear-cut example of the tendency to believe that those who dissent from acceptance must lack sufficient knowledge regarding the project.

The main themes of the email correspondence between community members and the developer include redirecting them elsewhere and a hesitation with discussing details via email. The developer rarely provided information that they collected as part of their proposal to the Government of Ontario, but did begin to provide links to other studies towards the end of the comment period. There was a tendency to believe that information deficiency was the issue and that providing them the opportunity to come to the open house and speak to a representative would change their mind. There were rarely questions asked by the developer in order to better understand complaints and follow-up was minimal.

A second example of public consultation correspondence comes from the Armow Wind Project Consultation Report[2]. This project is a 180-megawatt wind energy generation facility in Kincardine, Bruce County, Ontario. The examples taken from this report come from comments collected during public meetings, the developer's response to these comments and how they were incorporated it into the final plan. These examples come from synthesized comments that have been summarized and grouped together by the developer in order to present the information in a more accessible manner. The first category involves community impacts. Within this group, a number of residents stated their belief that the project is dividing up the neighbours and that its development poses a threat to the community. The response from the developer was that they believe this project will have a net benefit on the community and that they will see this once the project is up and running. Another category of comments was compensation. As with the previous example, a number of residents inquired about the distribution of benefits and specifically monetary gains. The developers responded by stating that they were considering what compensation would be fair for all. There were also a number of complaints that focused on environmental and economic concerns. Much like the responses to the public in the first example, the developer in this case took the time to highlight reports on economics and environmental impacts of wind turbines. Again we see the pervasive thought that simply providing information is enough to change the minds of those who oppose wind turbine development.

In this case, the developers gave some more details when pressed about why they had chosen the site they did. The developers stated that the site was chosen because it has excellent wind resources, close proximity to transmission and the interest of local landowners. However, there is no indication that acceptance and desire of the larger community was considered and it seems from their response that the most important aspect is the economic feasibility of the site. Another unique complaint found in this correspondence is one citizen pointing out that the public

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[2] Consultation Report for Armow Wind Project (February 2013) http://www.armowwind.com/files/3513/7246/3694/12-Consultation_Report.pdf

meeting was held at a time where dairy farmers had to be milking their cows. This effectively eliminated them from being able to participate in the consultation process. This highlights the importance of knowing the community you are working with if you want to be inclusive and sensitive to their specific demographics and the associated characteristics.

When further questioned about the vagueness of the community benefits section on their website, the developer responded by saying that the community benefits are proprietary information and thus cannot be disclosed on the website. Meanwhile, other complaints focused on the choice to have an open house meeting as oppose to a format that allows residents to hear one another speak. The open house is more of a buffet of presentations that allows residents to walk around and engage with experts in various dimensions of the project and receive information on each part separately. While residents can ask questions in these smaller groups, there is no larger group discussion and ideas are not formally shared between residents.

Underlying the communications from both examples and nearly all wind project public consultations is the issue of health concerns. There is a common belief among residents that there are negative health affects caused by living in close proximity to wind farms. This is a highly controversial topic and one that highlights the typical thought that the community is simply misinformed and/or unable to understand the studies that have been conducted. Health is a highly emotional topic especially when one is concerned for the well being of their family. As highlighted in the previous examples, and clear from even a quick perusal of the consultation reports, the typical response is to provide concerned citizens with studies proving that they should not worry. What is also clear is that this is an ineffective means of alleviating the concern of these persons and is a prime example of an opportunity where knowledge from social psychology can help break the cycle of mistrust between community and developer and how this and other issues can be settled. The next section will discuss ways to do this.

Social Psychology and Public Consultation

As has been stated numerous times before, the single biggest limitation of current public consultation efforts is the assumption that a lack of knowledge is the main factor behind a person's dissent. The approach that must be taken instead is to make the extra effort necessary to understand the underlying motivations and reasoning behind the opposition. This is discussed in the Theory of Planned Behaviour where behavioural and normative beliefs are said to affect one's position on an action such as opposing a wind development. This theory also includes past experiences as a major factor in the behavioural process and in any community you are likely to encounter many shared experiences that will impact how information is received. The idea of taking the time to understand the motivations of a community are also discussed in Pelletier and Sharp's (2008) paper on Self-Determination Theory and Message Tailoring. They discuss the invaluable nature of ascertaining what intrinsically motivates people and tailoring one's message to play on this information. While they admit this can be difficult and time consuming, it is this knowledge that allows one to communicate in a deeply meaningful way. This relates back to the ideas behind McKenzie-Mohr's Community-Based Social Marketing. McKenzie-Mohr calls for taking a systematic approach at understanding a behaviour and its causes. Utilizing this approach to gain an understanding of opposition to wind development would mean taking a systematic approach to uncovering exactly what is being opposed and why. Following the CBSM model, one way of doing this would be to use preliminary surveys and then take this information use it to hold more specific focus groups. Once some information has been gain and there has been an attempt to incorporate this into communications with the community, it will then be important to continue with the CBSM framework and evaluate these efforts. This means following up after the community concerns have been addressed to determine whether or not you have been sufficient in your attempts and whether or not the community is satisfied. These steps can then be repeated until both the developer and the community are satisfied that everything has been done to alleviate, address and incorporate their concerns in the development.

There are several other helpful pieces of information from social psychology literature that should be considered when developing a communication strategy and responding to public comments. The first item to keep in mind is the impact of discussing loss and uncertainty. As discussed by Lakoff (2009), any loss or uncertainty will be perceived poorly even if it is a necessary tradeoff for a much greater gain. Tradeoffs such as this will not be interpreted logically and the common reaction will be to oppose a plan that incurs any loss or uncertainty. Similarly, Pelletier and Sharp (2008) highlight how, when presented with the options of avoiding costs or incurring a gain, the former will be more appealing. There is a strong aversion to costs observed in social psychology research that does not always lead to logical decision-making. Rose and Dade (2007) also demonstrate the importance of providing a physical gain over a loss of any kind. They believe it is extremely important that the gain be tangible and something that can be seen, but most importantly that it is not perceived that anything is being given up.

As with the previous example, there are other things that can be done prior to the beginning of consultations, especially because approval by the government sets the tone that a decision has already been made. Having approval prior to beginning public consultations leaves one vulnerable to accusatory comments of meaningless consultation where opponents can claim that it has already been approved and nothing can be changed. The relational framing theory would suggest that approaching the consultation as an after-thought will invoke a dominance-submission framework for the consultation process. This will structure the remaining debate and cause normative influence to dominate. The result of this is decreased group accuracy, increased decision times and low individual support for the group decision. Essentially, while the community will tend to congregate towards the perceived majority position, no one will be happy with the outcome and it is less likely to be determined by facts. To try and avoid this, Arvai (2007) suggests using participatory decision-making in order to build a trusting relationship with the community. This technique can be used prior to seeking approval for a particular site in order to include the community in all aspects of the

planning phase. Increasing trust and fairness is also something often overlooked, but there importance is clear in the social psychology literature.

Henningsen *et al.* (2003) caution that there cannot be an assumption that trust exists. There is a need to go well beyond the bare minimum legal requirements in order to ensure trust from the community. As seen in the examples of responses, developers are quick to point out their effort to meet the standards the government has set; however, there seems to be no willingness to go beyond this level. This decision seems to be built on the assumption that there is some measure of trust already established between the government and the community- if the government thinks it is fine then the community should think so also. From the examples above and the hundreds of others that exist, it is clear that this is not the case. Coming into a community as a mistrusted outsider will cause people to seek out information from other sources that they perceive as more trustworthy. This will result in the dissemination of materials that may have misinformation from sources that oppose the development. Hillman (2004) also calls for efforts to show the process is being conducted in a fair manner. This also calls for going well beyond the legal minimum for consultation and certainly means that pointing out the legality of the development is not a response that will build a sense of trust in the community.

Building a Framework for Effective Community Engagement

As discussed before, behaviours, and especially those that relate to environmental issues, are much more complex than a universal reasoning or single rational mode of thought would indicate. Some of the motivations include values, beliefs, norms, network and perception of choice (Kazdin, 2009). Furthermore, each of these things influences one another in a different manner depending on personality and other individual traits. Each is also at work on multiple levels, including the community, the individual and the larger population. As such, any intervention and/or community engagement effort will have to consider a number of different approaches that may be appropriate given the specifics of the community. Kazdin (2009) discusses seven different areas one should consider for

these types of engagements: education, message framing, feedback of results, decision-making, use of media, incentives/disincentives and social marketing.

Education is merely the starting point and backdrop with which to base a community engagement strategy on. It is not to be considered a complete engagement strategy nor can significant behavioural changes be accomplished simply through education. This part of an engagement strategy should be focused on making the information necessary for a meaningful conversation easily accessible to all stakeholders and especially the public. This is also where one should act to combat misinformation through the establishment of trusted sources of information and remaining an impartial party. As Kazdin (2009) highlights, this is an opportunity to elucidate the connection between global climate change and the small-scale behaviour of individuals and communities.

Message framing, as been discussed before, is the opportunity to choose an appropriate means through which to portray your message. This is the time where one must consider what subconscious impact the wording and emotional content of the message might foster. This can be either positive or negative, but requires one to be aware of the potential outcomes and address them. The feedback area is the opportunity to continually engage with the community on the progress they have made. Regular feedback is important to foster the sustained behaviour change and larger shift in paradigm that should be the goal of a strong community engagement effort (Kazdin, 2009). The decision-making aspect Kazdin was referring to involves the choice you present to the community. One powerful tool that can be used in this manner is to make the proenvironmental choice the default choice, thus requiring one to act in order to opt out (Kazdin, 2009). This ensures only those that are most strongly opposed will opt out and will likely take the time to consider the issue earnestly.

The media will undoubtedly play a large role in shaping the opinions of a local community, especially those media sources broadcasting or writing locally. While Kazdin calls for shaping the portrayal of the issues in the media, it is perhaps

more practical to monitor it as a source of information and react accordingly. This involves explaining misinformation being presented and highlighting the local figures that are in support of the cause. Incentives and disincentive are obviously a major means to alter behaviour. It is important not to limit oneself to economic options, however, and approach the problem from a social side as well. Highlighting the community rallying behind a cause is a reward in itself and if presented in a clear manner can also act as an incentive. Finally, the use of social marketing and adding CBSM, which involves going into the communities, understanding them and then working back and using this knowledge to maximize the efficiency of each of the other areas discussed thus far.

The most successful behaviour change interventions are based on encouraging change for self-determined reasons, and the focusing on community engagement at an intrinsic level. Ideally, the goal should be to identify the values of the community one is working with and work with them to create solutions that fit within their value system (Conroy & Allen, 2010). As Conroy and Allen (2010) put it, this type of work is like raising a child: there is no replicable blueprint and there is a need for an array of approaches tailored to each individual situation. This calls for a focus on intrinsic values as these are more powerful than the more basic values of utility. Pelletier *et al.* (1998) recommend three areas to focus on in order to achieve this type of engagement. The first is to focus on autonomous support. This means not pressuring them or using coercive techniques, but rather creating a social and policy oriented environment that focuses on building up the community around renewable energy development. One model to follow in order to create this type of environment calls for the facilitation of the internalization of: feeling involved with a group, feeling competent to contribute meaningfully to the process and to think of the personal value to one's self (Deci & Ryan, 2008). Perhaps the most important factor is to involve individuals in the decision-making process, which can be considered the most powerful way of building autonomous support (Seguin, Pelletier & Hunsley, 1998). The second area of focus is on making them feel accomplished throughout the process. In behaviour change programs this takes the

form of constructive and consistent feedback. Similar efforts can be made when managing a renewable energy development project, where the community is continually briefed on progress and successes. Finally, Pelletier *et al.* (1998) recommend focusing on involvement. This can be achieved by understanding why the specific community is interested in renewable energy and focusing on highlighting these aspects. The goal here is to create genuine interest and involvement of community members.

The other major area to build a community engagement strategy from is trust and justice. These things are both pre- and co- requisites to intrinsic level engagement. As we have discussed before, trust is what allows us to evaluate information and technologies that we are not personally knowledgeable about (Midden & Huijts, 2009). Gaining the trust of a community will create the necessary environment to hold meaningful consultations where information can be judged based on its merits and not an emotional response. Trust is necessary for cooperation and cooperation can also build trust, therefore it is important to start on the basis of trust and build cooperation from there (Walker *et al.* 2010). This type of cooperation is what allows one to develop renewable energy in locally appropriate ways that fit the definition of a community project: community control over project, financial return for community and/or a sense of satisfaction/pride within the community (Walker *et al.* 2010).

The other component of this is justice and fairness. To a large degree the perception of a fair and just process is also a prerequisite to trust, but also requires a certain amount of trust to achieve as well. Procedural fairness is essential for achieving stakeholder and public support (Maguire & Lind, 2003). This is largely dependent on how the authorities behave and the way this is interpreted. One important figure is a facilitator who must demonstrate the ability to be unbiased and treat all participants fairly and equally. The reason this dimension is so powerful is because if the process is perceived to have been fair, even those who do not support the outcome will be accepting of it simply because of the manner in it was achieved (Maguire & Lind, 2003).

Conclusion: Achieving Meaningful Community Engagement

This paper has demonstrated that current community engagement practices in Ontario with regards to renewable energy development are ineffective and add to the culture of opposition to these technologies. Looking at the policies themselves and how they have changed over time, it is cleat that opposition has always been present and attempts to appease this have been largely unsuccessful. There are certain characteristics that form the type of person who accepts or opposes renewable energy development and the reasons are not as simple as the mainstream explanation of a knowledge deficiency. Social psychology literature reveals the complexity behind an individuals behaviours and positions. It also highlights certain tendencies that limit the effectiveness of communication when they are not carefully considered. As demonstrated from the examples provided and others throughout the province, there is very little (if any) care taken to engage communities in earnest and with the ideas of social psychology in mind. Moving forward it is necessary to consider a different approach to community engagement, one that is based on trust and the development of a partner relationship between developers and the communities they operate in.

The foundation of community engagement should be trust. This means there must be a clear and public display of willingness on the part of developers to create projects that are acceptable to our communities. Consultation cannot continue to be treated as an after thought- a way to inform the public or a place to record grievances with little chance for change. This means working with the community prior to proposing a site and project. Whether employing participatory decision-making or another technique meant to establish trust, the first step must be the establishment of this trusting working relationship.

Trust allows one access to the many options at their disposal for the remainder of the community engagement process. With trust one is able to share information on a two-way street, where developers provide facts about generating technologies and the community provides facts about the unique local

characteristics. Working with the community in this type of relationship will lead to siting and other decisions that are satisfactory for all. Establishing a trusting relationship will also allow one to apply theories of social psychology in order to be even more effective in communicating with the local community. This means understanding their values and tailoring messages to these, but also understanding the various human tendencies that can cloud judgment. These are things such as risk aversion and optimism bias. Being aware of these tendencies allows us to increase the accuracy with which information is shared.

The bottom line is to start with the premise that the community is your partner. Always keep in mind that a person's position on renewable energy is not simply a matter of their knowledge of this technology. The theories we have discussed paint a picture of the number of different factors that contribute to a position: past experiences, social influence, the most accessible frame and many more. Do not resort to fear, but follow Lakoff in the employment of empathy. It is important to listen to the needs of the community, but it is even more critical to demonstrate that their grievances are being taken to heart. Make concessions that show a willingness to develop renewable energy as partners and not as an outsider looking to profit from an area with good wind resources. With developers and communities working together in this manner, Ontario can finally become a world leader in renewable energy generation on the strength of our communities.

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